Section 2. Response to Comments

From February 1 through June 21, 2001, 22 individuals submitted written comments to DEQ on behalf of themselves, environmental groups, industries, universities, Tribes, or municipalities. Since some commenters submitted multiple comment letters, DEQ assigned a correspondence identification number (correspondence I.D.) to each separate submittal. If a submittal contained an attachment by a different author, then DEQ treated this correspondence separately. Appendix F provides a list of commenters and correspondence I.D.s.

Next, DEQ extracted verbatim excerpts from the correspondence and assigned each excerpt a comment number, comment subject, and comment subtype. The result is a listing of response to comments sorted by subject, as seen in Table 2-1 of this section. All comments except those from EPA are addressed in this table. EPA's comments and correspondence (correspondence I.D.s 17 and 32) with DEQ may be found in Appendix G.

Table 2-1 is sorted alphabetically by comment type and comment subtype and then numerically by correspondence I.D. and comment number. Commenters can look for their comments by finding their correspondence identification number (assigned in Appendix F), in the third column of Table 2-1. A response to comment list sorted by correspondence I.D. may be obtained from the DEQ website at http://www2.state.id.us/deq or by contacting Cyndi Grafe at (208) 373-0163 or cgrafe@deq.state.id.us.

DEQ received or was copied on pertinent correspondence after the close of the public comment period. Although DEQ does not conventionally accept or respond to comments received after the end of public comment periods, the Department made several exceptions since the correspondence received after June 22nd was significant enough to warrant a modification to the Department's responses. These exceptions include written comments or rebuttals received from EPA (Paula vanHaagen), James R. Karr, Tetra Tech (Jereon Gerritsen and Michael T. Barbour), and Chadwick Ecological Consultants, Inc.

The comments from Dr. Karr, Tetra Tech, and Chadwick Ecological Consultants, Inc. were included in the Table 2-1. The Tetra Tech comments (correspondence I.D. 30) were actually a rebuttal to Dr. Karr's original comments and therefore, required little response from DEQ. In Dr. Karr's second set of comments (correspondence I.D. 31), he expanded on his original comments (correspondence I.D. 20) and refuted some of Tetra Tech's rebuttal remarks. Since Dr. Karr and Tetra Tech's comments are related, DEQ grouped them together in the following table.

Table 2-1. Response to Comments by Comment Type and Subtype

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Aesthetics	support determination	11	66	The Water Body Assessment Guidance, Second Edition, (WBAG II) has added a new use designation, that of Wildlife Habitat and Aesthetics Use Support Determination. …It would appear far more objective to designate all waters or associated habitats as “unassessed” until evidence indicates that wildlife values in particular are fully supported or not supported.	DEQ did not add a new use designation. Wildlife habitat and aesthetics were addressed in the first assessment guidance in Section 500 (WBAG 1996). Wildlife and Aesthetics are a recognized beneficial use in Idaho's WQS § 100.04-.05. The 1996 guidance policy assumed these uses were fully supporting. DEQ does not currently have methods for assessing either of these uses at this time mainly due to resource limitations. Elements of the aquatic life assessment address these uses to some extent. WBAG II assumes these uses are fully supporting, unless evidence demonstrates otherwise. The request to develop methods for these two uses will be forwarded to DEQ administration for future priority setting.
Aesthetics	support determination	11	67	… recommends that this issue be divided into two separate issues; one addressing Aesthetics, and another addressing Wildlife Habitat.	See response to 11.66 (Aesthetics, support determination).
Aesthetics	support determination	11	68	… the best use of this support issue would probably be in relation to detrimental human impacts to waters and their immediate riparian habitats. An aesthetics determination could be developed based on a set of very general guidelines.	We appreciate this helpful idea and believe it has merit. It should be noted that DEQ's ambient monitoring focuses on in-stream conditions and relies on biology to integrate and indicate cumulative impacts of upstream water quality. Evaluating riparian zones would have to take into account the entire watershed in determining the support status, since the riparian condition at a point may or may not be indicative of the rest of the water body. DEQ believes the Idaho Department of Fish and Game (IDFG) and US Forest Service (USFS) have some experience in this area and will seek out their advice once priorities and resources allow.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Aesthetics	support determination	25	338	Guidance is limited regarding contact recreation and water supply use and nearly non-existent regarding wildlife habitat and aesthetics use …The proposed WBAG II does not establish quantitative protocols for determining if contact recreation use exists, although it identifies three main categories of evidence that should be used. Comprehensive direction should be included to guide consideration of the evidence, particularly that related to water body size and accessibility.	See responses to 11.66 (Aesthetics, support determination) and 17.185 (Appendix G, Contact recreation, support determination).
Antidegrada-tion	general	14	99	We recommend that DEQ further explore the antidegradation framework in relation to its potential linkages with the WBAG II processes. In particular, the antidegradation policies provide the opportunity and framework to establish different levels of protection to various tiers or categories of waters, and might be useful in relation to our other comments on the need for the WBAG II to establish best attainable goals for both pristine, minimally impacted systems and those that have been substantially modified.	DEQ generally concurs with the recommendation, but it is beyond the scope of the water body assessment guidance. Presently, the goal of WBAG II is to determine impairment, not moderate levels of degradation. The recommendation will be forwarded to DEQ administration for consideration.
Antidegrada-tion	general	24	250	The Guidance must also apply the antidegradation policy and the policy's alternatives review. However the current draft Guidance fails to apply this important component of standards policy.	See response to comment 14.99 (Antidegradation, general).
Aquatic life	other uses	14	94	The documents need to provide guidance on use refinement and assessment methods for other uses in the water quality standards (seasonal cold, modified, warm water) and applicability and development approaches for site specific criteria.	We agree that guidance is needed is these areas. Due to limited resources, DEQ has prioritized the development of different guidance documents. Since most of Idaho streams would fall into the category of cold water biota and salmonid spawning, DEQ sought to develop sound assessment methods for these uses first. As resources and administration priorities allow, DEQ will develop additional guidance to address other aquatic life uses.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Aquatic life	other uses	14	109	Seasonal Cold Water Biota Procedures Omitted: Thus, it would appear that a somewhat different evaluation process would be needed for seasonal cold water use. As noted earlier, one of the principal short-comings of the WBAG II and related documents is that only cold water and salmonid spawning aquatic life uses are addressed, with the implicit assumption and explicit outcome that all water bodies that don't clearly support these uses are to be labeled as "not fully supporting" and thus in need of 303(d) listing and/or a TMDL.	DEQ assumes this comment refers to undesignated waters; DEQ has provided guidance on identifying uses for undesignated waters for assessment purposes (see WBAG II Section 3). Section 3 identifies several different tests that are used to determine if cold water biota should be the presumed use. If there are no data to perform these tests, then the guidance states the assessment is undetermined and additional data are gathered. Consequently, WBAG II does not implicitly assume cold water biota uses for seasonal cold water bodies. As noted in Section 6, assessment of seasonal cold water bodies would likely require establishing different reference conditions. The development of such an application will be performed later in the process given current resources and priorities. See response to 14.94 (Aquatic life, other uses) for more detail.
Aquatic life	other uses	25	256	… the proposed WBAG II does not adequately provide for the use determinations of seasonal cold or warm water aquatic life nor does it provide for the assessment of the degree to which a water body supports either of these aquatic life beneficial uses… In these two cases, the proposed WBAG II is vague or silent on the manner by which seasonal cold water or warm water beneficial uses are to be identified as existing and also fails to detail how a use support determination is to be made.	See responses to 14.94 (Aquatic life, other uses) and 14.109 (Aquatic life, other uses).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
BURP	methods	21	229	DEQ needs to provide information on when, where, and how each BURP sampling takes place and what the outcomes (raw data and MBI score) for each sampling are. DEQ also needs to provide GIS layers that clearly show each BURP sampling site and all information and data gathered at these sites.	WBAG II provides only the methodology to assess existing and readily available data. Specifics regarding the Beneficial Use Reconnaissance Program (BURP) monitoring protocols may be found in the annual BURP work plans. Section 2 (WBAG II) provides an overview of the surface water monitoring program and how data will be extrapolated for assessment purposes. Actual sample site locations and information about specific sites may be requested at any time. Assessment results using WBAG II will be provided separately in the 303(d) list and 305(b) report. DEQ plans on using EPA's Assessment Data Base (ADB) to provide specifics of sample location, sample collection date, and the assessment results.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
BURP	methods	25	259	Although reconnaissance survey data are useful in a number of applications [i.e., preliminary identification of areas of concern, documentation of changes over time, etc. (Rosenberg and Resh 1996)], there are a number of inherent problems that generally render such data inadequate to support decision-making regarding the condition of a water body. Specifically, reconnaissance data generally are not based upon a comprehensive network of sites, and thereby are incapable of diagnosing condition throughout the watersheds in which they are located or for discerning variability among the various habitat types within a watershed. Unless an overwhelming number of new collection sites are established, it is unlikely that the randomly located sample sites are representative of their Water Body Identification System unit (WBID) assessment area or capable of providing even a “snap-shot” of condition. Furthermore, reconnaissance data do not reflect changes through seasons, and thereby are incapable of diagnosing condition status throughout the year. Reconnaissance data do not fully capture the natural variability of stream systems in space or time.	BURP sites are not randomly located, but are carefully chosen by regional experts to represent larger reaches of water bodies. BURP takes many steps to control for temporal variability and targets the sampling timeframe during the likely period of low flow and high temperature. Consequently, samples are generally taken at times when the water body is naturally under maximum stress in terms of temperature, dissolved oxygen, discharge, and use. Furthermore, reconnaissance level ambient monitoring is commonly used by many states across the nation (Barbour et al. 1999, Gibson et al. 1996, and Southerland et al. 1995). EPA's standardized field and assessment guidance encourages states to adopt this type of monitoring strategy (Sutfin 2001). See also response 14.107 (BURP, river methods).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
BURP	methods	25	263	The proposed WBAG II dictates a July through September monitoring season for streams and an August through mid-October season for rivers, but fails to provide an explanation. Furthermore, even with efforts to standardize the dates of collection, the use of a site by invertebrates and fish at any given date can be disrupted in the short term by a number of ecological factors that have nothing to do with the site's underlying water quality (e.g., flood, drought, fire, the expression of life history patterns such as diurnal or seasonal migration, etc.). In addition, with reconnaissance sampling, short-term impairment of water bodies can easily be missed if the field crew isn't collecting during the period of impairment. The proposed WBAG II does not include provisions to accommodate either seasonal or short-term variations and ensure temporal representativeness, nor does it include adequate guidance for ensuring spatial representativeness of the sampling sites.	See responses 14.107 (BURP, river methods) and 25.259 (BURP, methods)
BURP	methods	25	264	Many parameters measured and/or rated as part of BURP depend heavily upon training of field crew to ensure consistency.... It is likely that, in some instances, the variation introduced by crew field practices is larger than the variation to be expected between water bodies that fully support a beneficial use and those that do not.	DEQ takes many steps to ensure that crews are trained in a consistent manner. Some of these steps include yearly training of regional supervisors, standardized training material and methods, standardized protocols, and independent field reviews of each crew by State Office staff. DEQ continually works to improve field methods through conducting pilot studies annually. While introduction of variability in rated measures is a possibility, this is lessened by other quantitative methods in the BURP protocol.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
BURP	river methods	14	107	The WBAG II should provide a description of the scientific basis for these particular index periods so that users can understand and appreciate why DEQ believes that data collection must be restricted to these periods (if that in fact is the intent). The WBAG II also needs to provide some flexibility for data collected somewhat outside these windows (and/or provide an opportunity for site specific reference conditions…	DEQ uses index periods to reduce the variability of results and allocate resources cost-effectively. Use of an index period is recommended by EPA (Barbour et al. 1999). To minimize year to year variability, maximize equipment, and maximize accessibility to targeted assemblages, Barbour et al. (1999) recommend sampling during periods of low flow. For these reasons, DEQ samples when pollutant concentrations are likely to be highest and sampling is safest.
Contact recreation	general	15	129	Page 74, Section 6-3 [should be Section 6-4]...Whether a water body is designated as primary or secondary contact, what is the liability to the water user if people swim, water ski or participate in other recreational activities in water diversion areas when those recreational activities are secondary to the intended beneficial use? And what will be the liability to the intended beneficial use when the department designates a water body for primary or secondary contact? This could affect the water delivery for agricultural use or limited the access for the public.	The Idaho water quality standards do not require a beneficial use to occur. Identifying beneficial uses, such as contact recreation, for assessment does not indicate that a private waterway must allow contact recreation. As stated in WQS § 101.01, the designated use of a water body does not imply any rights to access or ability to conduct any activity related to the use designation, nor does it imply that an activity is safe.
Contact recreation	support determination	25	285	Provisions are needed to ensure protection of water bodies where use determinations can not be made…–contact recreation...Unfortunately, the proposed WBAG II does not define low, moderate or high potential risk, nor does it establish protection protocols for those water bodies that are not assessed.	See response to 17.185 (Appendix G, Contact recreation, support determination).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Contact recreation	support determination	25	339	Guidance is limited regarding contact recreation and water supply use and nearly non-existent regarding wildlife habitat and aesthetics use ...The proposed WBAG II does not establish quantitative protocols for determining if contact recreation use exists, although it identifies three main categories of evidence that should be used. Comprehensive direction should be included to guide consideration of the evidence, particularly that related to water body size and accessibility. Furthermore, a time frame should be specified for consideration of evidence indicating the presence and use of swimming areas or bathing beaches. Aquatic Life use is assumed to exist if it was present more recently than 1975, even if the use no longer can be documented to occur. A similar logic could be applied to contact recreation use.	The WBAG document determines the support status of a water body for specific beneficial uses. The WBAG is not intended to be used as a methodology for designating uses for which a water body should be protected. Designating uses is a separate process (see WQS § 101.01 and Idaho Code 39-3604).
Criteria exceedance	10% policy	16	139	Also we question the validity of IDEQ evaluating the amount of an exceedance which warrants impairment,...Short-term criteria exceedances may have significant effects on aquatic species (i.e. avoidance of habitat, delay of spawning, alteration of migration etc.). Short-term effects are also of magnified importance in systems with endangered species.	Federal policy allows states to interpret their own criteria and determine when an exceedance of criteria constitutes a violation of water quality standards. DEQ followed EPA's lead (EPA 1997) in using a 10% exceedance threshold as a guide for impairment. Furthermore, this policy allows determination of impairment with less than 10% exceedances if indeed there is measurable adverse effect to the water body (see Sections 4.3 and 5.2.).
Criteria exceedance	10% policy	16	140	Section 4.2.1 DO, pH, turbidity, TDG: As these parameters have instantaneous criteria, we question the value of allowing 10% of the measurements to exceed the numeric criteria prior to being considered a violation.	See response to 16.139 (Criteria exceedance, 10% policy).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Criteria exceedance	10% policy	25	269	The proposed WBAG II does not include any provisions that would limit application of 10% rule in situations where the numeric criteria is exceeded by a large margin or for an extended period. ...To be conservative, the 10% rule should not only address the frequency of the exceedance, but be modified to also include provisions regarding the magnitude and duration of the exceedance.	We agree that it would be prudent to consider magnitude and duration of criteria exceedance as well as frequency. DEQ has observed that the magnitude of the greatest exceedance and the duration of exceedance are correlated to the frequency of exceedance for the conventional parameters referred to in this policy (see Section 5.2.1). This issue is recognized nationwide, as demonstrated in EPA's initiative to create a Consolidated Assessment and Listing Methodology (CALM). CALM has struggled with this question and has yet to resolve it. As soon as DEQ receives some federal direction on this issue, we will attempt to more appropriately address magnitude and frequency.
Criteria exceedance	general	13	87	Section 4—Criterion Evaluation and Exceedance Policy This section does not specifically address the impacts of multiple, near exceedances that do not individually rise to the level of a violation of water quality standards, but cumulatively could result in negative impacts on beneficial uses. How do you propose to handle such situations?	DEQ believes that one of the great advantages of biomonitoring, such as BURP, is that it integrates cumulative effects of multiple pollutants, which individually may not exceed any criteria and thus trigger Idaho's control authorities. Biomonitoring can give us an early warning. We address water bodies that violate water quality standards through the 303(d) and TMDL processes. DEQ will continue to keep the public informed of our findings.
Criteria exceedance	general	15	126	I like the approach the department is taking on whether a pollutant is a violation based upon the criteria of magnitude, duration, and frequency.	Thank you, we hope to improve with time.
Criteria exceedance	general	16	138	Page 4-1: We would like further information on the amount of flexibility allowed assessors to consider exceedances in context of the setting, time of year, and beneficial uses in order to determine potential negative effects. This flexibility may allow for personal and political biases to affect these serious decisions.	The language in Section 5.1 (now Section 5.2) has been reworded. DEQ believes some flexibility is necessary in addressing the response of complex ecological systems. Our best guard against personal and political biases is documenting the basis for assessment decisions along with public comment on our 303(d) list. For this reason, it is important that the public remain informed in our 303(d) listing decisions. Also, see response to 17.177 (Appendix G, Criteria exceedance, general.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Criteria exceedance	narrative criteria	15	130	Page 40, Section 4-3. In the absence of specific criteria, an investigative approach should be taken to determine if fish or cattle kills are caused by drinking water containing toxic algae. We hope the department will use an investigative approach that isn't biased by narrative statements and refrain from making a final determination until all the information has been investigated.	We agree that narrative criteria are difficult to evaluate and strive to make our determinations based on as thorough an investigation as our resources allow. Fish kills and cattle dying are clear evidence of impairment, which demands follow-up to identify the cause. See Section 5.1.
Criteria exceedance	narrative criteria	25	268	Unfortunately, the proposed WBAG II does not establish a non-subjective process for evaluating nutrient or sediment exceedances. It simply requires that the assessor provide a documented rationale for their judgment. For the narrative toxic substances standard, it proposes that chronic toxicity test results be used to assess compliance, and opines that failure of toxicity chronic tests of effluents in dilutions similar to ambient concentrations (using fathead minnow or Ceriodaphnia) can be correlated with impaired instream condition, and vice versa. As many native species may be more sensitive to toxic substances, it is questionable whether this is an adequate standard for determining whether or not the presence of toxic substances is impairing a water bodies ability to support aquatic life as a beneficial use.	See response to 17.183 (Appendix G, Criteria exceedance, narrative criteria). Toxicity tests are accepted methods that minimize false negatives or missed impairment. If DEQ were presented with evidence that native species are more sensitive to the effluent of a particular discharger, DEQ would further investigate the situation. In addition, the narrative for toxic substances does not stand in isolation. Idaho's water quality standards also have numeric criteria for numerous toxic substances (WQS § 210), which can be tested for if there is a probable toxin source. DEQ also has a number of biological indexes that may signal toxic impacts.
Criteria exceedance	other variables	23	244	Sections 2, 3, and 4 of the Second edition of the WBAG do not address fisheries habitat issues, or negative impacts to fisheries habitat from bedload movement and peak flows.	If stream habitat data meets Tier I data criteria it can be used in the aquatic life use support assessment (see sections 4.3 and 6.4). Habitat is not specifically mentioned in Section 5 as Idaho's water quality standards have no specific narrative or numeric criteria for fish habitat. If fish habitat is adversely affected by excess sediment it would be addressed through the sediment narrative criterion but the proof is often difficult. DEQ has prepared several TMDLs to reduce sediment loading in order to improve fish habitat.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Criteria exceedance	salmonid spawning	13	89	Section 4.2.3—Salmonid Spawning We agree that water quality criteria should preferentially protect indigenous species...our goal should be to manage water quality to protect the native species. Use of IDFG Fisheries Management Plan and additional consultation with IDFG regional fisheries personnel can assist your staff in determining the appropriate use designation.	DEQ appreciates assistance in determining appropriate use designations. Idaho's water quality standards have no provision for a use designation specific to indigenous species. Our cold water aquatic life use is intended to protect all fish species, native or introduced. We plan on coordinating with IDFG on data useful for water body assessments, use designations, and comment on our 303(d) list. It should be noted that designating uses is a separate process from WBAG II.
Criteria exceedance	salmonid spawning	16	142	Section 4.2.3 Salmonid Spawning, page 4-6: While the broad time periods in Table 4-1 protect for spawning and incubation, the current Idaho water quality standards do not protect for rearing. This is of particular concern for steelhead, since cold water biota temperatures approach near lethal levels for this endangered species.	WBAG II must address current water quality standards. DEQ handles comments concerning adequacy of those standards under the rulemaking process. The current cold water aquatic life criteria of 22°C maximum daily maximum and 19°C maximum daily average are intended to protect salmonid rearing, including steelhead. While some Idaho waters approach or exceed these criteria at times, we have seen little evidence of adverse effects on fisheries at these temperatures (Essig 1998).
Criteria exceedance	salmonid spawning	25	272	It is interesting to note that the proposed WBAG II makes a point of the fact that these additional criteria apply only during the spawning and incubation period, but fails to point out the fact that for many waters of the state this period encompasses most of the year. A more balanced document would make this point so as to ensure that assessors are aware of both facts.	Given the broad time periods in Table 5-2 this would indeed appear to be the case. In fact, spawning is often quite localized and typically moves up the watershed in response to seasonally changing temperatures. DEQ has provided more detailed salmonid spawning time periods in Appendix F. We will continue investigating when and where spawning and incubation occurs since the criteria are intended to apply to these times and places.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Criteria exceedance	temperature	13	88	Section 4.2.2—Temperature Additional factors that can influence water temperature and should be evaluated as well as those listed, are groundwater/surface water interactions; habitat alterations that remove riparian vegetation and/or change stream channel morphometry (e.g., widening stream channels and decreasing water depth); and flow alteration (e.g., diversions and return flows).	Although these factors influence stream temperature, DEQ has no authority to regulate factors outside the stream channel. Our water quality criteria are for water temperature, not riparian shade levels or channel width/depth ratio. If we find water temperatures are too high and can trace increases in temperature to inadequate shade or widened channels, we can then work with land management agencies to implement desirable changes to reduce water temperature.
Criteria exceedance	temperature	16	141	Section 4.2.2 Temperature, page 4-5: Again we question the latitude given an assessor to conclude when a temperature standard is violated. There is already a 10% exceedance criterion that allows for many exceedances and a reasonable margin of safety. ...The need for change in land management is indicated by these exceedances.	The need for change in land management aside, we believe assessor flexibility is particularly necessary for water temperature as it naturally exhibits a large dynamic range, making it impossible for a single value criterion to reliably indicate problems. Also see responses to 16.138 (Criteria exceedance, general), 16.139 (Criteria exceedance, 10% policy), and 17.177 (Appendix G, Criteria exceedance, general).
Criteria exceedance	temperature	25	270	The proposed WBAG II appears to reflect DEQ's reticence and discomfort with the presence of temperature criteria in the water quality standards. ...The exemption from temperature criteria during periods of "extremely high" air temperatures fails to consider frequency as well as magnitude and duration. Further, it apparently fails to understand that during periods of "extremely high" air temperature, aquatic life are more likely to be up against critical thermal thresholds when human activities can have a greater effective impact on the ability of a water body to support aquatic life beneficial uses than during periods when critical thermal maximums are not threatening.	The high air temperature exemption in Idaho's water quality standards (WQS § .04) considers frequency, magnitude, and duration. Extremely high air temperatures warranting an exemption is a rare occurrence. The commenter's point that times of high temperature are especially critical to aquatic life is well taken. DEQ has recognized the difficulty of applying fixed temperature criteria to a highly variable environment (Essig 1998) and would like to further revise its temperature criteria to more reasonably reflect natural variations. It should also be noted that the WBAG II addresses current water quality standards. Changing the high air temperature exemption would require consideration under the rulemaking process.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Criteria exceedance	temperature	25	271	Furthermore, DEQ contends that exceedances of water temperature criteria can occur under natural conditions, and specifies that background levels shall become the applicable site-specific water criteria. ...It should be noted, however, that livestock grazing is an accepted practice is wilderness areas and numerous ecological repercussions have been associated with such livestock-induced reduction of soil structure, soil compaction, damage or loss of vegetative cover ...With the demonstrated inability of DEQ to select reference sites in a conservative manner and the failure of the proposed WBAG II to provide direction for determination of "natural background conditions," this provision is of concern.	Exceedance of the current temperature criteria can occur quite naturally and temperature-altered waters can still meet criteria. Although our current standards do not provide details for distinguishing these two situations, they do provide a direction on natural conditions. Although additional guidance is needed on determination of natural conditions, it is outside the scope of the WBAG II document. Our challenge will be to craft separate guidance, and perhaps rule changes, that allow DEQ to minimize both false positives (indicating water temperature is altered when it is not) and false negatives (indicating water temperature is not altered when it is). If specific data regarding the grazing effects on the temperature of particular Idaho waters exist, we hope they will be brought to our attention regarding DEQ reference site selection. See responses to 7.12, 11.47, 11.50, 11.49, 12.77, and 25.274 (Reference, site selection).
Data quality	BURP-compatible	25	266	None-the-less, it is likely that much of the fish and habitat data collected by the agencies whose primary task it is to manage these two resources will be determined to be BURP-incompatible. ...For example, the proposed WBAG II directs that fish data must be collected with an electrofisher over 100 m of stream to be considered compatible. As a result the volumes of data collected ...can not be incorporated directly into either the Stream Fish Index or River Fish Index. ...Finally, it was indicated at the Moscow hearing that fish data was to be collected by electrofisher in a single pass, rather than through depletion techniques. This approach is prone to significant error, especially in water bodies with complex habitat features (e.g., large woody debris) or low conductivity.	DEQ has revised Section 4.3. and Table 4-1, WBAG II (formerly Section 3.3. and Table 3-1, WBAG II, respectively), to reduce confusion on DEQ policies concerning outside data. If the fish data are not BURP compatible, then the Stream Fish Index or River Fish Index are not calculated for that data. Maxted et al. (2000), reached similar conclusions about applying outside (independent data sets) data to a specific index developed with different field methods, subsampling, tolerance values, and metric scoring. However, the data may still be incorporated into the assessment process (see Section 4.3.) if they are classified as Tier I and have accompanying analysis and results. Also, see response 25.303 (Fish, RFI development) regarding electrofishing data. This data could also be used for 305(b) reports, planning for monitoring, and subbasin assessments.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Data quality	data age	21	232	DEQ chooses to accept outside data no older than five years, does this mean DEQ will not be using its own data older than five years in making beneficial use and 303(d) determinations?	Yes, that is correct. DEQ will not use its own data older than five years to make 303(d) determinations. Such data would be classified as Tier II and incorporated into other water quality decisions.
Data quality	predictive modeling	16	136	3.2.2 Data Relevance: The new WBAG states that if predictive modeling is used, DEQ also examines calibration factors. We support this approach, but also want to caution that the accuracy of models in predicting environmental outcomes is limited. ...We suggest great care be taken in the use of predictive modeling to give quantitative results. We also suggest that when model is used for a specific watershed that its appropriateness for that watershed be confirmed.	DEQ concurs with this comment and has revised Section 4.2.1. (formerly Section 3.2.2.) to ensure that predictive models are not used solely to make beneficial use determinations. DEQ policy is to use a minimum of two data types (see Section 4.3.4.) to determine beneficial use support.
Data quality	solicitation	16	168	We suggest that IDEQ adopt a policy of consulting with the Nez Perce and other tribal fisheries and water resources programs to obtain water quality and fish data for inclusion in the assessment process. In addition, the National Forests and other federal agencies have extensive data on some water quality parameters, which also would be a useful addition to BURP data.	DEQ intends to specifically request data from likely sources as well as issue a public notice requesting data (see response to 17.170 (Appendix G, Data quality, public notice)). In Section 4, we have described the type of data necessary to make different water quality decisions so that interested parties will more fully understand how to contribute to the assessment process.
Data quality	solicitation	21	236	DEQ should strive develop better working relationships and/or cooperative agreements with other agencies and Tribes throughout Idaho to seek to collect data which is compatible for the uses of all interested parties.	See responses to 16.168 (Data quality, solicitation) and 17.170 (Appendix G, Data quality, public notice).
Data quality	tiers	15	128	Page 35, Section 3-6. 3.2.3.3. Tier III...I do not believe that Tier III data should be used or even contemplated for further monitoring unless the narrative information is first confirmed by the department's professional staff. Information from unqualified individuals should not be used as the basis for additional studies or resource allocation in the planning process.	DEQ agrees that our professional staff should review such information. Tier III data does not automatically dictate future monitoring. The decision to monitor particular reaches is based on whether the assessor believes it is warranted along with current monitoring resource priorities.
Data quality	tiers	16	135	3.2 How Data is Evaluated B Tiered Approach We applaud the scientific rigor required in Tier I data.	Thank you. We appreciate your support toward this approach.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Data quality	tiers	16	137	3.4 How Outside Data Is Used In Other Beneficial Use Determinations...Tier II data can be crucial in determining beneficial uses and subbasin condition when sufficient Tier I data is not available. We strongly suggest that especially in these circumstances Tier II data be given consideration.	DEQ has guidance that incorporates Tier II data in identification of beneficial uses and subbasin assessments (see Section 4, Table 4-2, and Section 4.3.). However, DEQ does not use Tier II data in 303(d) listing or delisting decisions.
Data quality	tiers	16	169	While we agree that data collected using different protocols and a different number or set of habitat parameters may not fit readily into the BURP analysis, such data can provide critical information for assessment purposes. ...Less compatible data could be used as a supplement, especially if it meets Tier I criteria.	DEQ allows for flexibility in incorporating non BURP compatible data. See responses to 16.137 (Data quality, tiers), 25.266 (Data quality, BURP-compatible), and 17.171 (Appendix G, Data quality, BURP-compatible) for further clarification.
Data quality	tiers	21	228	More detailed information needs to be provided to clarify the difference between Tier 1 vs. Tier 2 data in the outside data policy. DEQ needs to provide a separate guidance document to clearly state how non-DEQ data will be evaluated and used in determining if beneficial uses are being met and in making judgments on listing or de-listing water bodies on the 303(d) list	DEQ has revised Section 4.3. and Table 4-2 to reduce confusion on DEQ policies concerning outside data and classification of such data using a tiered approach. DEQ believes the guidance now clearly describes how data are used in beneficial use support determinations.
Data quality	tiers	24	251	The Guidance allows for only tier I data to be used to make 303(d) listing or de-listing determinations. This appears to be arbitrary and in conflict with federal regulations.	See response to 17.171 (Appendix G, Data quality, BURP-compatible). EPA's more recent 303(d) guidance suggests a scoring range of 1-4 to indicate the reliability and precision of the data used in an assessment determination. Idaho has three ratings, which we call tiers, based on rigor and relevance. Consequently, DEQ believes the policies described in Section 4 are consistent with EPA and other states, most notably, Oregon and Washington.

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Data quality	tiers	25	267	First, outside data appear to be held to a higher standard than BURP data by the requirement that "sampling needs to have been conducted at multiple times and locations." Data are collected only once a year at some BURP monitoring sites. More importantly, the tiered approach appears to allow evidence of water quality impairment or beneficial use support failure to be discounted. If a process is established that allows such evidence to be disregarded because of questions about its rigor, a conservative approach requires that process to assume the responsibility for rigorous and timely investigation of the alleged impairment or failure.	Section 4.2.3.1 states that sampling needs to be conducted at multiple times and locations or at a representative location with specific locations identified on a map or with Global Position System (GPS) equipment. BURP data meet the same Tier I requirements as outside data because they are representative of specific locations identified with GPS. DEQ believes the requirements for different tiers of data to be used in different water quality decisions is a sensible and balanced approach. DEQ must develop the 303(d) list using a legitimate process. Not only is the 303(d) list extensively scrutinized, but it also affects many different entities in terms of management and funding decisions. Therefore, it is DEQ's responsibility to make sound judgments in the assessment process using technically defensible data.
Data representa-tion	general	14	108	Data Representation: We find that Section 2.2.4. regarding data representation (and related sections) is somewhat confusing, and depending on interpretation, may significantly complicate listing and delisting processes, or render the overall program very difficult to implement because of the need to have data on a spatial frequency that DEQ resources may not support. This could place unnecessary constraints on program progress and effectiveness. We support the need for appropriate data rigor and quality, but wonder about the implications of the use of absolute spatial delineation criteria such as those in section 2.2.4. We recommend that DEQ further explain or clarify these policies in the WBAG II and make their implications clearer to stakeholders.	DEQ concurs and has revised Section 2.2.4 to no longer include an absolute spatial delineation.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Data representa-tion	monitoring	25	261	...the proposal does not identify the number or boundaries of the assessment areas nor does it correlate these assessment areas to the location of BURP monitoring sites. As a consequence, it is impossible to evaluate the extent of the sampling site, and therefore data, shortfall... It is likely that many existing BURP sites are not representative of their assessment area... As proposed, the WBAG II appears to have failed in meeting the most basic spatial requirements of study design.	Water bodies and associated water body units may be found in the Idaho water quality standards (WQS § 110). The locations of BURP sites are ever-changing due to additional data collection annually; consequently, DEQ does not include this information in WBAG II. As part of the 2002 303(d) process, DEQ will notify the public of water bodies to be assessed. Information concerning associated BURP sites will be provided in two places: 1) DEQ formal request for data and 2) DEQ web Arcview Internet Map Server (ARC/IMS) tool, which will allow the public to comment on specific water bodies and associated BURP sites. See also responses to 21.229 (BURP, methods) and 17.213 (Appendix G, Data representation, general).
Data representa-tion	stratification	16	167	Section 2.2.2, Water Body Stratification: We question whether the parameters used to stratify land use and stream order provide adequate discrimination of natural variables when comparing sites. We suggest elevation, dominant geology, and gradient and confinement be added due to differing responses of aquatic species to these variables.	Some of these additional stratefiers suggested are incorporated through the use of ecoregions in our indexes. WBAG II incorporates ecoregions or groups of ecoregions that are a mosaic inclusive of geology, soils, vegetation, relief, precipitation regime, topography, and human activity (Omernik 1986). DEQ believes the stratification approach must be refined enough to identify suitable groupings of water bodies for assessment purposes, but not so detailed the number of water bodies to be assessed becomes unmanageable and excessive of available resources.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Data representa-tion	stratification 10 mile policy	25	260	While stratifying by stream order and land use is a good initial step, it falls short of the USEPA (1997) recommendation that different expectations be associated with different soils, geology, vegetation and hydrology. Further, the proposed WBAG II specifies that DEQ generally will not use a single monitoring site for determining condition on more than 10 miles of stream or more than 25 miles of river. Given that there are over 100,000 miles of stream, the proposed WBAG II appears to require that a large number of monitoring sites be established	See response to 16.167 (Data representation, stratification) and 14.108 (Data representation, general).
Data representa-tion	WBID	16	166	Section 2.2.1, page 2-4 Water Body ID system: As EPA implements the CWA on the Nez Perce Tribe Reservation, we suggest that the WBID numbers change or end at the Reservation boundary. This would clearly distinguish the segments for which the Tribe, EPA, and the State of Idaho have management responsibility.	Water body identification numbers or units are incorporated into the Idaho water quality standards (WQS § 110). WBAG II is an assessment methodology that addresses the current water quality standards. Consequently, this comment is beyond the scope of WBAG II; however, it was forwarded to the Water Quality Standards Manager for further consideration.
Fish	native species	7	15	The SFI fails to include a preference for native species and their more stringent habitat requirements.	The SFI is a tool to estimate whether a healthy, balanced fish community is present. Native species are an important factor in assessing community health by comparing water bodies to reference condition. Two of the six SFI metrics relate to native species. The comment offers no evidence supporting more stringent habitat requirements for native species. DEQ would appreciate literature citations or other evidence indicating that native species have markedly different habitat needs than some introduced species (e.g., brook vs. cutthroat trout).
Fish	native species	11	56	Comments have included a concern that native species are not considered accurately, that assemblages do not accurately represent smaller streams or large river conditions, and that DEQ may be mixing warm and cold water assemblages, etc.	See response 7.15 (Fish, native species).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Fish	native species	11	58	1. Are native salmonids and other native species adequately assessed and are their needs/uses adequately protected under the WBAG II process? How does the process ensure that adequate and/or appropriate management attention is given to ESA species? ESA fish and other aquatic species? ESA riparian obligate and/or dependent species?	WBAG II is not an Endangered Species Act (ESA) process. However, the WBAG/303d/TMDL process can identify waters needing further investigation or restoration which may benefit listed species, and certainly does no harm to listed species. See response to 7.15 (Fish, native species).
Fish	population	4	6	WE DO NOT WANT FISH POPULATIONS LINKED TO WATER QUALITY ASSESSMENTS!!!!!!!!!!!!!!	Relative abundance of cold water fish in comparison to abundances at reference is one indication of stream health. We agree abundances are variable; consequently, DEQ has opted to consider this as a factor, but not a strong single indicator in the assessment process.
Fish	presence	7	14	Presence of fish at such a site indicates one thing and one thing only... there are fish there. It says nothing about the water quality above it except that it may be somewhat better than the river the fish swam out of or won't swim into.	DEQ believes the presence of multiple species, sensitive native species, and multiple ages of fish do suggest suitable environmental conditions exist. See response to 4.6 (Fish, population).
Fish	RFI development	25	303	River Fish Index (RFI) metrics – The RFI should include metrics addressing native/exotic species composition (see discussion above on SFI). As discussed earlier under concern #4, the limitation to the use of single-pass electrofishing to determine abundance is overly restrictive and prone to error, even in rivers.	The RFI includes metrics for both native species (positive relationship) and percent exotic species (negative relationship). If multiple-pass electrofishing data was required in the indexes, then DEQ data and most other outside data would be unusable. DEQ is comparing results from single-pass electrofishing to the reference condition. We are not using or reporting absolute numbers of species present or fish densities that would require multiple-pass data.
Fish	RFI scoring	16	162	Chapter 4. River Fish Index There appears to be an error in Table 4-4. Under the column labeled “Index general scoring ranges” the last entry should be “<50”, not “>50.”	DEQ has revised the guidance to reflect this change. See Section 6.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Fish	RFI scoring	25	277	Despite application of the same percentile rule, the two river indexes that are standardized to 100, the River Fish Index (RFI) and River Physiochemical Index (RPI), appear to require a higher effective standard be met than is required for the three standardized stream indexes.	Percentiles of reference will yield different values for different types of streams. For example, the 25th percentile of reference condition is the same effective standard for rivers and streams, regardless of whether the numbers are different. Also see response to 25.343 (Physiochemical, RPI scoring).
Fish	salmonid spawning	10	38	B. The SFI is not adequate to determine support status for salmonid spawning...Salmonid spawning is considered to be automatically fully supported if the SFI finds full support for fish. Specific criteria for the salmonid spawning support determination has been eliminated in WBAG II. The support status of Salmonid spawning (SS) must be assessed separately since SS is a designated beneficial use.	The SFI is not solely used to determine the support status of salmonid spawning. The ALUS determination also uses habitat and macroinvertebrate information. Additionally, DEQ separately assesses any data associated with salmonid spawning numeric criteria. DEQ believes the approach in WBAG II is objective and reasonable.
Fish	salmonid spawning support determination	5	7	When salmon quantities become the deciding factor, it must be realized there are many streams which have never witnessed the presence of a salmon. Other creeks are equally unsuited for smaller species due to stream size, fall rate and various kinds of natural stream-bed obstructions.	DEQ generally concurs with the comment, except the commenter may have interpreted “salmonid” (trout, salmon, or whitefish) as “salmon.” DEQ has added a definition of “salmonid” to the glossary to reduce confusion.
Fish	salmonid spawning support determination	10	39	Diversity of habitat, the presence of particular habitat components, and compliance with the numeric criteria that apply to SS, i.e., specific water temperatures, intergravel and water column dissolved oxygen, along with appropriate criteria for fish abundance and age class diversity should be considered in the determination of support status of salmonid spawning.	Most of the factors mentioned in this comment are in fact used to determine salmonid spawning status through the ALUS assessment (habitat diversity, fish abundance, and age class diversity). Numeric criteria specific to salmonid spawning is also addressed separately. See Sections 5 and 6 along with response to 10.38 (Fish, salmonid spawning).
Fish	salmonid spawning support determination	11	60	3. The WBAG II does not appear to include adjustments for potential and/or historic fish and habitat values….How can the WBAG II process be used and/or improved to protect, for example, salmonid spawning potential, even if fish are currently absent- due to inappropriate land use practices or other impairments?	See response to 16.164 (Fish, salmonid spawning support determination).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Fish	salmonid spawning support determination	13	86	We encourage you to coordinate with our regional Environmental Staff Biologists to utilize IDFG fish population and habitat data when it is available to assist in making beneficial use support status calls.	DEQ concurs with this comment.
Fish	salmonid spawning support determination	16	164	The WBAG criteria for support of beneficial uses appear to have the goal of preserving the status quo with respect to salmon. The recovery efforts of the region mandate that efforts be made to improve habitat and water quality with the goal of restoring salmon populations to a harvestable level.	This comment is more appropriate to recovery planning for listed species. However, the WBAG II process will have the effect of identifying problem waters for restoration which, to the extent salmon are limited by water quality problems, is congruent with salmon improvement goals.
Fish	salmonid spawning support determination	25	284	Salmonid spawning should not be assumed to be fully supported in the absence of appropriate data ...Given that salmonid spawning use requires compliance with a number of more stringent criteria, this assumption can not be scientifically supported.	Should the unidentified “appropriate data” be available and conclusive, then the WBAG II process allows for this data to be used (see Section 4.3.). Also, DEQ separately assesses any data associated with salmonid spawning numeric criteria (see Section 6).
Fish	SFI development	7	10	Of most concern to me is the failure of the Stream Macroinvertebrate Index (SMI) and the Stream Fish Index (SFI) to reliably indicate the support status of the water body, particularly in the Northern Rockies Ecoregion (NR).	DEQ concurs that the SMI in the Northern Mountains required further investigation. See response to 7.345 (Macroinvertebrates, SMI development). DEQ believes the SFI can be used with other information to indicate the support status of aquatic life. In consideration of public comment and analysis of discrimination efficiencies and Type I/II errors of the reference and impaired data set, DEQ has raised the scoring criteria for the SFI. See Section 6.4.1.
Fish	SFI development	10	40	Another major problem with the SFI (conceded by its author) is that sampling a reach is not necessarily indicative of stream-wide fish abundance. ...ISSEAF at 5-101. Furthermore, as a result of the small sample size, the SFI has a substantial error component.	Given resource limitations, it is not feasible to census entire streams and consequently, representative reaches are sampled (see Section 2). Although fish may be scarce in some streams, DEQ believes fish data provide important information in an integrated assessment. DEQ has raised the SFI scoring criteria to balance Type I/II errors. See Section 6.4.1.2.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Fish	SFI development	12	82	Pg. A4 -Abundance…the typical abundance measure is "number of individuals per unit area of stream surface." In some cases DEQ is using #/(area*time).	This comment refers to the DEQ application of electrofishing data. The SFI and RFI use relative abundance (catch per effort in comparison to reference), which is scaled differently for different sized streams and rivers. See Section 6 and supporting technical documents (Grafe 2002b and 2002).
Fish	SFI development	12	83	Pg. A5-Richness…richness should include introduced fish. It is inappropriate to list streams for water quality concerns simply because Fish & Game or other parties decided to stock brook trout 50 or 100 years ago. Essentially DEQ will be asking landowners to incur costs and take actions because of a legal fishery management activity that most likely occurred before the CWA was passed. This is in appropriate and outside the CWA authority.	Metrics in fish indexes were selected based on their performance distinguishing fish communities at reference streams from those disturbed streams. No social valuations were attempted. See response to 7.15 (Fish, native species).
Fish	SFI development	12	84	The definition mentions "introduced or tolerant native fish". DEQ should provide a specific list in this document.	DEQ has added the taxa list to WBAG II and will provide current updates on the DEQ web site (http://www2.state.id.us/index.htm).
Fish	SFI development	12	85	The document mentions "number of salmonid age classes." DEQ needs to clearly define how many individuals it takes to have an age class.	One individual fish of a specified size indicates an age class.
Fish	SFI development	16	156	SFI...Page 4-22 and page 4-27: ... Thus the SFI does not adequately discriminate between reference and impaired test sites for rangeland streams. We suggest that a more stringent evaluation process be applied to identify reference sites of a more pristine character in order to enhance this metric….The 50th percentile of reference condition would provide greater certainty to rate at the maximum condition score.	With this comment and others in mind, DEQ performed additional analysis to determine the appropriate scoring criteria for the SFI. See response to 7.10 (Fish, SFI development).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Fish	SFI development	23	246	The fish indexes cited on page 5 -2 1, (SFI and RFI) do not appear to adequately address bedload movement and peak flow issues as they relate to protection of Bull trout habitat or fisheries in Idaho. The SHI index cited on page 5-22 also does not appear to address bedload movement and peak flow issues as they relate to protection of Bull trout habitat or fisheries.	The various aquatic life indexes are not specific to particular disturbances. If these disturbances were significant, the SFI or SHI would usually give lower scores in comparison to reference condition. Lower scores for the SFI, for example, might be due to lost age classes or lower abundances.
Fish	SFI development	23	247	We have the same concerns regarding the 3 fish indexes cited and their lack of analysis of bedload movement and peak flows in relation to protection of WCT habitat and fisheries in Idaho…...The Final WBAG should include information that will indicate if each of the fish indexes are designed to protect WCT habitat if peak flows and bedload movement issues are not considered.	See response to 23.246 (Fish, SFI development).
Fish	SFI development	25	297	As was discussed at length under concern #6, above, and in the immediately preceding section, the inclusion of questionable sites as references also may have skewed the SFI.	A large sample size and rank-based statistics were used to minimize the influence of any questionable sites that might have slipped through the screening criteria for reference. The commenter did not identify which sites were considered questionable or why. See responses to 7.12 and 25.274 (Reference, site selection).
Fish	SFI development	25	298	The set of metrics proposed for use in rangelands and forestlands should include a native/exotic species parameter...Many fisheries professionals consider the presence of exotic species equivalent to biological pollution ...As discussed earlier under concern #4, the limitation to the use of single-pass electrofishing to determine abundance in rangeland and forestland streams is overly restrictive and prone to error. Finally, many rangeland streams are not cold water systems; consequently, the use of “percent cold water individuals” as a metric for richness and composition in all rangeland waters is counterintuitive, and the addition of percent redband and percent mottled sculpin to the indicator metrics may be warranted for bioregions within their range.	A native/exotic statistic is not useful because many sites had no exotic species which would result in divisions by zero. Although "percent exotics" was found to be a useful metric in the RFI, the stream reference and disturbed sites did not show any difference. Most rangeland reference sites did have some coldwater species present; redband trout or mottled sculpin were common. Consequently, the “percent cold water individuals” metric seemed warranted. See also responses to 12.82 (Fish, SFI development) and 25.303 (Fish, RFI development) regarding the use of single-pass electrofishing data.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Fish	SFI development	29	348	The SFI shows promise as being an informative component for evaluating water quality in Idaho, but should be used in conjunction with the other measures used by the IDEQ because of the depauperate fish fauna of the region.	DEQ concurs with this comment. We have eliminated the overwhelming score approach and require a minimum of two data types to make an assessment determination (see Section 6.4.2.2).
Fish	taxa list	12	75	Pg. 5-8-First paragraph… "…Zaroban et al. (1999)… and … Hillman et al (1999)" Comment: DEQ should include in this document the specific lists (subject to change as new information comes available) of "highly stenothermal" species. It should not be left up to individuals to search out and interpret information from various sources.	See response to 12.84 (Fish, SFI development).
Fish	taxa list	25	292	but failed to display which of 130 species collected through the BURP program other than Rhyacophila could be considered cold water indicators, or indicators of other aquatic life beneficial use. This internal information should be made available in the final document with the inclusion of a list of macroinvertebrate species indicative of cold water, seasonal cold water, or warm water aquatic life use. Similarly, fish indicator taxa should be included in the final WBAG II, with the mottled sculpin included as a cold water indicator per the discussion in the proposed document on this subject.	See response to 12.84 (Fish, SFI development).
Habitat	river index	25	280	A habitat index is not proffered for consideration during river use support determinations. This oversight is not explained despite the fact that healthy and diverse habitats are critical elements that determine the degree to which rivers are able to support aquatic life. It is especially problematical given the concerns expressed earlier regarding protocols for distinguishing between the two size classes of water body (streams and rivers).	DEQ collected data on river habitat variables to evaluate significance in impairment determinations (see Fore and Grafe 2000). Most of the variables measured did not correlate well with independent indicators of impairment. Presently, this is a research issue nationwide with little resolution. Maret (2001) found that the Qualitative Habitat Index was not statistically significant for Idaho rivers. DEQ will continue to investigate habitat features, particularly large-scale features, that are more appropriate for large water bodies. DEQ will also continue to review current research to identify potential variables for future incorporation.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Habitat	SHI development	10	35	B. The Stream Habitat Index needs Improvement...1. A major shortcoming underlying Fore and Bollman's scientific analysis of the HI and development of the SHI is the result of deficiencies in the data made available to them. The data sets were extremely limited by their small size, numerous gaps and inconsistencies, with the result that sample sizes used in the development of the SHI were extremely small (Lesca Fore, personal comm.).	Over 300 sites (sample size) were used in the analysis to test metrics and develop the index. The overall BURP data set was limited to relate land cover data to stream site condition. Specifically, a subset of sites located at the "pour point" of the watershed (5th field HUC) was identified for analysis. Almost 1,500 sites were used to develop scoring criteria for the index. Some sites did not have data for all variables as some variables were added in later years. The habitat variables collected use a combination of quantitative and qualitative techniques. DEQ intends to improve some of these variables in the future through pilot testing and additional investigation. Also see response to 17.216 (Appendix G, Habitat, SHI methods).
Habitat	SHI development	10	36	2. Fore and Bollman's conclusions regarding the relative significance of individual habitat measures in the 3 ecoregion groups, e.g. SRB, NBR, NR/MR, appear to indicate that the ability of the SHI to discern impaired conditions would be improved if a set of applicable habitat measures were adopted for each ecoregion...Because of the 'one size fits all' approach, metrics that appeared to be highly significant in (only) one ecoregion were not included in the SHI and therefore will not be used to assess habitat in the ecoregion where they are clearly an indicator of degradation. This discussion indicates that different habitat measures work for different regions. Clearly an SHI ought to be developed specifically for each ecoregion group.	DEQ evaluated whether a separate SHI was necessary for each ecoregion. Generally, the 10 variables in the current SHI showed to be significant in all ecoregions. Only two additional variables, pool/riffle ratio and bank stability, were found to be slightly more statistically significant in the Northern Mountains. Based on this analysis conducted by Fore and Bollman, (2000) DEQ determined that one general index with different scoring criteria for each ecoregion was appropriate and technically defensible. As DEQ collects more data and conducts future analysis, it may be possible to develop SHI's for each ecoregion if it is technically defensible and a resource priority.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Habitat	SHI development	11	57	Additional comment concerns have been directed towards the habitat index; with concerns that habitat types may have been mixed in developing indexes (i.e. gravel bottom and mud bottoms), that warm or cold water indexes may be mixed, that samples or assessments may be inconsistent, that natural or human-caused impacts may be confused or inadequately assessed, as well as other similar or related issues (DEQ 2001, IDFG 2001, Harm 2001, Marvel 2001, Churchwell 2001).	Fore and Bollman (2000) performed analysis to determine the best classification/stratification approach and appropriate comparisons of water bodies. The analysis also included the correlation of each variable to human disturbance. Comments relating to sampling methods are beyond the scope of the WBAG II, which uses readily available monitoring data to determine support status.
Habitat	SHI development	11	61	4. The stream habitat index appears to many interested publics to be lacking in substance and detail; including but not limited to measurable cobble embededness standards, inherent bank stability and bank disturbance standards, allowable sediment standards limits (general, not TMDL driven), and generalized bacteria standards for all surface waters.	Fore and Bollman (2000) tested a number of habitat variables and performed about 4,200 statistical tests. DEQ will only include variables in the SHI that indicate, through testing, significant correlation to impairment indicators and application for large regional or statewide indexes. Some of the variables suggested for inclusion in the SHI were not collected by DEQ and therefore, could not be tested. Other recommended variables were tested and found not to be significantly correlated to indicators of impairment. DEQ intends to improve the collection methods of some variables through pilot testing and additional investigation. In the future, DEQ may find that other variables prove to be more significant and modify the SHI. WBAG II addresses current water quality standards. Standard limits for particular habitat variables is a water quality standards issue and beyond the scope of the WBAG II.
Habitat	SHI development	23	245	In Section 5, there is a discussion of the SMI, SFI, and SHI, pages 5-10 through 5-13. None of the 3 Indexes appear to include either fine or coarse bedload movement, or the cumulative effects of increases in peak flows and coarse bedload movement that result in negative impacts to fisheries habitat.	See response to 11.61 (Habitat, SHI development).

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Habitat	SHI development	25	283	Habitat variables have been identified as useful indicators of aquatic ecosystem health by a number of authors. Perhaps most relevant to the proposed WBAG II protocols, Overton and others (1997) have developed and published a handbook on fish and fish habitat inventory procedures for the Northern and Intermountain Regions of the Forest Service (the two regions found in Idaho).	See response to 11.61 (Habitat, SHI development).
Habitat	SHI development	25	340	Five of the metrics specified for the Stream Habitat Index (SHI) are field rated using eye estimates, despite the fact that USEPA (1999) explicitly recommended against the use of ocular measurements. As discussed in #7 above, habitat variables have been identified as useful indicators of aquatic ecosystem health by a number of authors. Additional or modified habitat metrics (including pool frequency, residual pool depth, bank stability, width/depth ratio) as discussed in Bauer and Ralph (1999), Overton et al. (1997), and MacDonald et al. (1991) should be evaluated to determine their utility. Finally, as discussed in concern #6 and #7, careful consideration needs to be given to the influence of poor reference site selection on the utility and accuracy of the SHI.	See response to 11.61 (Habitat, SHI development).
Habitat	SHI methods	10	37	3. At least fifty percent (5 out of 10) of the metrics in the new SHI are estimated, rather than measured. Ocular estimates of conditions are subjective and therefore not reliable or repeatable...Under Recommendations, Fore and Bollman suggest that several of the chosen metrics could be improved by measuring rather than estimating them. ISSEAF at 5-106...Several key quantitative measurements would greatly improve the SHI for the NR/MR: instantaneous temperature, streambank stability, width/depth ratio, and pool quality and quantity measures, such as residual pool volume, average pool substrate size, and pool frequency.	See response to 11.61 (Habitat, SHI development).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Habitat	SHI methods	25	300	Five of the metrics specified for the Stream Habitat Index (SHI) are field rated using eye estimates, despite the fact that USEPA (1999) explicitly recommended against the use of ocular measurements. As discussed in #7 above, habitat variables have been identified as useful indicators of aquatic ecosystem health by a number of authors. Additional or modified habitat metrics (including pool frequency, residual pool depth, bank stability, width/depth ratio) as discussed in Bauer and Ralph (1999), Overton et al. (1997), and MacDonald et al. (1991) should be evaluated to determine their utility. Finally, as discussed in concern #6 and #7, careful consideration needs to be given to the influence of poor reference site selection on the utility and accuracy of the SHI.	See response to 17.216 (Habitat, SHI methods).
Habitat	SHI scoring	7	11	This failure is made more egregious by the elevation of these two indices to an exalted position relative to the Stream Habitat Index (SHI)...	DEQ considered several factors when developing policy concerning SHI integration. First, Fore (2001) recommended the SHI not be used equally to the SMI and SFI until additional data collection and analysis were conducted. Second, the SHI showed significant variability. This is not uncommon to see as reported by Bauer and Ralph (1999). Further, habitat variables can be indicators of possible beneficial use impairment, but are not direct measures. With this in mind, DEQ developed a policy where the SHI was included in the interpretation of stream condition, but not used solely through the application of a minimum threshold. Additionally, DEQ has decided not to use the overwhelming score approach. A minimum of two data types will be required to make an aquatic life use determination unless significant outside data are available. In cases where DEQ uses outside data, the assessor is required to provide sound justification (see Section 4.3.). See also response to 25.280 (Habitat, river index).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Habitat	SHI scoring	7	17	Habitat indicators are the predictive tools available yet they are relegated to insignificance through the scoring approach proposed. WBAG II's failure to adopt habitat indicators as the primary diagnostic tool promises that Idaho will continue to be faced with a non-support "crisis" and costly cures rather than the modest costs of preventative strategies. It's pretty simple: when riparian vegetation is destroyed and major disturbance of the upland vegetation and soils occurs, water temperature goes up and dirt goes down(stream).	See response to 7.11 (Habitat, SHI scoring).
Habitat	SHI scoring	10	33	A. Habitat plays a minimal, virtually non-existent role in beneficial use support determinations. The Stream Habitat Index ("SHI"), with improvements, should play a major role determining the support status of aquatic life uses, particularly salmonid spawning ...Simply put, evidence of habitat degradation is a strong signal that aquatic life uses are prevented from being fully supported...Hard evidence of habitat degradation is readily available through the BURP data collection and from other sources. With WBAG II, DEQ continues to downplay or ignore it.	See response to 7.11 (Habitat, SHI scoring).
Habitat	SHI scoring	16	152	Section 5.5.1.2 Stream Habitat Index, page 5-13: These percentiles are too low…. Assessors should be comparing to pristine reference sites, or to a higher percentile since already impacted sites are considered in the range of reference sites.	See response to 7.11 (Habitat, SHI scoring).
Habitat	SHI scoring	16	160	Page 6-6: Due to the importance of physical habitat and the variability in biological systems, we would suggest that habitat be weighted equally with the SMI and SFI. In addition, since the reference sites are less than pristine ("least impaired") we suggest that the 25 percentile rather than the 10th percentile be considered the minimum threshold for habitat.	See response to 7.11 (Habitat, SHI scoring).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Habitat	SHI scoring	25	281	A habitat index (SHI), along with indexes for macroinvertebrates (SMI) and fish (SFI), is a component of the protocol for stream use support determinations, however the protocol is heavily weighted against the importance of habitat data. First, the proposed WBAG II would assign only two condition categories (i.e., below and above the 10th percentile) and ratings (i.e., 1 and 3) for the SHI, eliminating categories corresponding to both a minimum threshold and a rating of two. This "lumping" of categories purportedly was done because DEQ is cautious about equally integrating the SHI, because of documented variability in physical habitat measures, and has the effect of masking the evidence that could be contributed by the SHI. It is unlikely that properly developed habitat parameters measured by adequately trained field crew would vary to an unacceptable degree.	See response to 7.11 (Habitat, SHI scoring).
Habitat	SHI scoring	25	282	Second, the proposed WBAG II excludes consideration of the SHI in the overwhelming score approach, effectively prohibiting the use of habitat data alone from consideration when making a use support determination. Since the proposal would allow a use support determination to be made solely on the basis of SMI or SFI scores, and there is no rationale given for the bias against the SHI, this discrimination is not acceptable.	See response to 7.11 (Habitat, SHI scoring).
Implementa-tion	enforcement	11	53	2. Once a 303(d) determination has been made, is there adequate enforcement of requirements to actually effect any change for the benefit of fish, other aquatic life, or riparian habitats?	DEQ is addressing comments specific to WBAG II. Comments regarding 303(d) list enforcement and implementation are beyond the scope of this document.
Index integration	scoring support determination	16	157	Page 6-1:The document states that IDEQ usually considers circumstances as outlined in Table 6-1 as meeting overwhelming score approach. What are the exceptions?	DEQ has decided not to use the overwhelming score approach. Only the multiple data type integration approach will be used, which requires a minimum of two data types. See Section 6.4.3.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Index integration	scoring support determination	10	44	E. The scoring regimes appear to be arbitrary and biased toward full support. ...Relying on a single set of data to determine full support was a major flaw in WBAG I and led to the delisting of many impaired streams due to the inherent bias toward FS. This major flaw remains a problem in WBAG II.	Barbour (1999) and Jessup and Gerritsen (2000) report many states use between the 10th and 25th percentiles based on their confidence of reference condition. The use of these percentiles rather than the minimum score of reference condition allows for some margin of safety in determining impairment. DEQ has confidence in the reference condition for several reasons. First, DEQ used standard criteria based on Hughes (1995) to identify reference sites. Second, more than one assemblage is used to determine support status adding more certainty to the assessment process. Lastly, DEQ analyzed the discrimination efficiency and Type I/II errors of the reference and impaired data sets used to develop the stream indexes. Based on this analysis, DEQ has changed the scoring for the stream indexes. The SHI scoring was changed to a 3,2,1 approach while the SFI percentile breakpoints were increased. The SMI percentile breakpoints were unchanged except the minimum threshold was changed to the minimum of reference condition. Additionally, the scoring for the SMI northern mountains bioregion changed due to reanalysis using a different reference and impaired data set. See Section 6.4.1. and response to 7.345 (Macroinvertebrates, SMI development.
Index integration	scoring support determination	10	45	The final numeric manipulation of the index scores, i.e., assigning 1,2,3 to the SFI and SMI, 1,3 to the SHI, averaging them and selecting <2 as the definition of NFS also appears arbitrary and biased toward FS calls.	See response to 10.44 (Index integration, scoring support determination).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Index integration	scoring support determination	12	81	Section 5.5.1. Stream Index Scoring Comment: This entire section is designed to maximize listings. DEQ has provided no balance between type I errors i.e. putting "good" streams on the list and type II errors leaving "bad" streams off the list errors. For example: The 5th percentile threshold assures that 5% of the reference streams will be listed. Suggestion: Remove this criteria altogether, or use the minimum reference condition. Specifically, Figure 5-3…the arithmetic here assures that between 10 and 25% of reference streams will be listed. Suggestion: Use the minimum reference condition. The two suggestions above will ensure that any listed stream does not look like a reference stream. We will therefore be focusing our TMDL efforts on streams in which we have a high confidence level are actually "bad".	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	14	105	The overall assessment takes the highly refined and detailed indices (and their associated metrics) for diatoms, macroinvertebrates, habitat and fish and boils them down to an average of simple scores. This appears to be overly simplistic and too prescriptive. DEQ needs to allow for professional judgment and site-specific interpretation flexibility	The rivers index integration approach was peer-reviewed by experts nationwide. The approach received overwhelming support from these experts. DEQ tested the approach internally using actual data and found the results to be reasonably accurate. DEQ will continue to review and consider other reasonable approaches for future incorporation. These approaches would require testing to prove their technical defensibility. Also, see Section 4.4. reconciliation of conflicting data. It is possible for other data to change the preliminary ALUS determination if certain tests are met.
Index integration	scoring support determination	14	123	Overall Assessment…metric rigor...the approach may be overly simplistic. The greatest concern is whether or not the science behind the integration methods is sound, and how well it has been reality checked or tested with real examples.	See response to 10.44 (Index integration, scoring support determination). DEQ would appreciate additional input by affected stakeholders.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Index integration	scoring support determination	14	125	We believe there is insufficient detail and too few specific site evaluations given in the River Framework to support the validity of the overall assessment method. ..., the weight of evidence approach described by the Water Environment Research Foundation may provide a good starting point. We understand that the averaging of scores of different indexes is an attempt at a "line of evidence" approach as described in the Rivers Framework. But we believe the specific process developed here requires more analysis and discourse with affected stakeholders.	See response to 14.105 (Index integration, scoring support determination).
Index integration	scoring support determination	16	150	Section 5.5.1 Stream Index Scoring, page 5-10: ..." We suggest IDEQ use at least the 50th percentile. Plafkin (1989) uses the 80th percentile to indicate "non-impaired", 29-72% for "moderately impaired", and less than 21% for "severely impaired" when comparing to reference sites. As reference condition is defined by IDEQ as a group of sites considered to be "least impacted," these sites will exhibit a range of impairment. It would be preferable to either identify pristine reference sites, or use a higher percentile to identify lack of impairment.	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	16	151	Table 5-4, page 5-12: Streams with very low biological integrity will rate high in the IDEQ system. The highest condition rating (3) is given to streams with SMI and SFI greater than the 25th percentile. Below the 25th percentile as compared to a reference should be considered the minimum threshold.	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	16	158	Page 6-4: We suggest that the 25th percentile rather than the 5th percentile be considered the minimum threshold for the SMI and SFI. As comparisons are being made to less than pristine ("least impaired") sites that may exhibit land use impacts, the higher percentile of 25 % adds a margin of safety.	See response to 10.44 (Index integration, scoring support determination).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Index integration	scoring support determination	16	159	The State of Oregon DEQ defines "full support" for resident fish and aquatic life as "an assemblage unimpaired or in natural condition less than 1 standard deviation from mean reference site condition." ... How do the IDEQ percentile categories compare with this approach?	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	16	165	IDEQ uses the 25th percentile of reference condition for river and stream macrobiotic and fish indices benchmarks to assess sites. ...The basis for assessment needs to be as close to pristine conditions as possible, and some of the reference sites are already degraded. ...we suggest IDEQ use at least the 50th percentile. Likewise, IDEQ concludes that a water body is not fully supporting if it has one of the above indices below the 5th percentile. Surely, it is clear that non-support occurs far before that level.	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	22	241	I seriously question the stream index scoring system that has been developed. My concern is based on the possibility that this scoring system will result in numerous unaccessed and non-managed drainages, including reference streams, not meeting required standards. This indicates a flawed system.	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	25	275	To compound the problems associated with poor reference site selection, the proposed WBAG II is not conservative in establishing the degree of divergence from reference conditions that is acceptable. In fact, when the percentile rules are applied to the SMI example provided in Figure 5-2, it is apparent that a site must have suffered severe degradation to be adjudged incapable of fully supporting beneficial use. .... It appears that given a lack of conservatism in selecting the reference sites, both percentile standards are set too low. This problem is compounded when two or more data types are available and multiple data type integration protocols are followed.	See response to 10.44 (Index integration, scoring support determination).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Index integration	scoring support determination	25	276	The failure to be conservative in establishing the degree of acceptable divergence from reference conditions also affects the Stream Fish Index (SFI) and the Stream Habitat Index (SHI).	See response to 10.44 (Index integration, scoring support determination).
Index integration	scoring support determination	20 31	222 366	May 25, 2001 letter: . . . when they apply the percentile rules as implied in [Figure 6-2] and accompanying text, massive degradation must be present before a site can be judged impaired. [Figure 6-2] suggests that sites are not really degraded unless and until they are below the 25th percentile as defined by this graph. That is an SMI score of about 58. Effectively that means that their index does not show any substantive degradation until more than 40% of the index range of 0 to 100 is lost. That means that a major amount of degradation is accepted without question . . . This is not a very sensitive approach to anticipate early degradation and take action to halt it. July 10, 2001 letter: If the percentiles quoted were meant to be percentiles of the reference set, that leaves us in the odd position of concluding that 25% of our reference sites are degraded when the process begins with an assumption that they are not influenced (or are least impacted) by human actions. This would seem to be a difficult position for the agency to defend . . . percentiles are arbitrary as stated in the rebuttal . . . arbitrary decisions should be evaluated so that we understand how our choices influence the relative risks associated with different choices. One way to resolve this problem is to document the variability of index values (and index components) based on replicate samples at reference sites. . . .Careful study can make those choices less arbitrary and their consequences more transparent.	This comment relates to the ability of the Stream Macroinvertebrate Index (SMI) to detect low to moderate levels of degradation. The commenter is referring to the CWA Section 319 Antidegradation Policy and EPA regulations at 40 CFR 131.12, "[e]ach state must enforce a statewide antidegradation policy aimed at maintaining and protecting instream uses and existing "high-quality waters" (that is, those exceeding "fishable and swimmable" levels)." (Water Environment Federation 1997). While this is an important aspect of the CWA it is not the intent of WBAG. WBAG II and associated multimetric indexes were not designed to predict moderate or even subtle levels of degradation. Policies concerning antidegradation are handled under a separate process. Presently, the WBAG seeks to implement Section 303 of the CWA, and to identify those waters that fail to meet water quality standards or beneficial uses. The WBAG does not determine how much degradation has occurred. Rather it determines when enough degradation has occurred to prevent the water body from attaining water quality standards or supporting beneficial uses (i.e., impaired or not fully support). This is not to say the index could not be used for gauging high quality waters, detecting degradation, and used in the future for setting antidegradation policy. Ultimately, any decision on where to draw lines, whether for determining impairment or antidegradation is the discretion of the implementing agency. To determine the percentile breakpoints, DEQ evaluated the discrimination efficiencies (DE) and

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
					Type I/II errors for all the stream indexes. A Type I error is calling a full support stream impaired and a Type II is calling a not fully support stream unimpaired. For the SMI, the 25th percentile breakpoint met both criteria. The breakpoints for the SFI and SHI have changed based on the same analysis (see Section 6.4 and 10.44 Index integration, scoring support determination). Also see response to 14.99 (Antidegradation, general) and 17.174 (Appendix G, Reference, site selection).
Index integration	scoring support determination	30	360	July 6, 2001 letter: In Idaho's system, the rating of a stream is based on its comparison to a percentile of the reference sites, not a percentile of all sites. This means that variability among reference sites is taken into account by choice of the percentile. One could quibble over the best percentile to use (5th, 10th, 25th, median), which amounts to a societal decision on the relative risk of degradation vs. unnecessary expense for restoration.	This comment was a rebuttal to comment 31.366 (Index integration, scoring support determination). Although DEQ did not request this rebuttal, we appreciate this further clarification.
Introduction – Section 1	biological integrity	23	243	If the biological integrity of fisheries and fisheries habitat is to be protected in Idaho's waters, attention also needs to be given to particles in stream beds. ...Section 1 of the Final WBAG should address the fish habitat issues that have been cited from the EPA document as these issues relate to Idaho water quality standards that are to protect the biological integrity of water bodies. It is not clear in section 1.4.2 how the biological integrity of Idaho's water bodies are being protected if there is degradation of fisheries habitat in water bodies as a result of peak flows and bedload movement.	The effects of peak flows and bedload movement are addressed in the aquatic life use determination. The effects from such events often stress the aquatic life and result in reducing taxa richness, diversity, etc. DEQ can identify these cumulative impacts by using different measures or metrics for different assemblages such as fish or aquatic insects. DEQ then combines these measures into an overall index and determines if these events have impaired the aquatic life beneficial use.

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Introduction – Section 1	criteria	8	25	Page 1-8. Narrative criteria. The States narrative criteria for nutrients are misleading, deficient and inappropriate as a standard for assessing a water body status. The lack of definition as to what constitutes excess nutrients must be site specific. Best professional judgment for what constitutes excess nutrients is also fraught with subjectivity.	WBAG II addresses current water quality standards. Comments regarding particular water quality criteria are beyond the scope of the public comment request and should be addressed in the water quality standard rulemaking process.
Introduction – Section 1	general	8	24	Page 1-1. We suggest removing the fourth bulleted item. The WBAG II process is not capable of determining the causes (pollutants) and sources of the impaired designated use.	Revised accordingly.
Introduction – Section 1	general	23	242	It would be helpful if the Final WBAG could include in section I.4.I information that would indicate which specific section of the CWA includes the requirement that beneficial uses in existence in 1975 must be protected.	Revised accordingly.
Introduction – Section 1	general	24	249	The intent of the Guidance states that its application is not intended to determine compliance with state water quality standards.	The WBAG II does not determine compliance with state water quality standards. The document is intended solely as guidance for use by DEQ staff in making beneficial use support determinations.
Macroinverte-brates	RMI development	8	27	The River Assessment Guide uses a percent Elmidae (riffle beetle) to help assess water quality. In significant portions of Idaho rivers where riffles do not occur or are rare, doesn't reliance on a percentage of riffle beetles seem inappropriate?	DEQ believes the RMI has received acceptable review and validation of its effectiveness and consequently, should be used in the river assessment process. The RMI was published in a peer-reviewed journal (Royer et al. 2000). Additionally, the index was reviewed independently by several national experts as part of the overall river assessment technical peer review (Grafe 2002c). Finally, USGS independently tested and validated the RMI using a separate data set (Maret et al., 2001). The small sample size is understandable given that there are much fewer large rivers than small streams in Idaho. However, sites used to develop the RMI represented all the large river systems in Idaho.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Macroinverte-brates	RMI development	14	115	RMI...Sample Size for Metric Development...the sample size is quite small, especially for the test sites, and this likely has a substantial influence on the development of the RMI for which only 5 test sites were used.	See response to 8.27 (Macroinvertebrates, RMI development).
Macroinverte-brates	RMI development	14	116	RMI...Metric selection...We believe the percent Elmidae metric is problematic, and recommend elimination of this metric until more data be collected to establish its validity for Idaho rivers.	See response to 8.27 (Macroinvertebrates, RMI development).
Macroinverte-brates	RMI development	14	117	RMI...Scoring approach..., but it is not clear how the score of 16 as the cutoff for good conditions was developed. scoring range between good and poor is very narrow, essentially two numerical units….. Two metrics appear to be the drivers for the IRI and RMI scores at the Boise River sites: percent Elmidae and percent Predators. . It is difficult to accept that a numeric difference of only several points equates to a biological difference of good versus poor.	DEQ's intent was to use the RMI exactly as developed by Royer et al. (2000). However, a 0 - 100 scale seems more reasonable and workable with the current river index integration. Since changing the scale requires additional analysis, DEQ will investigate making this change in a future edition of the WBAG.
Macroinverte-brates	RMI development	16	161	Chapter 3. River Macroinvertebrate Index. The evaluation of the results of validation sampling is based on data from only three sites believed to be impaired. One of those sites scored highly indicating good condition. What is given as the likely explanation is that the site is not in as degraded a condition as initially believed. Given the limited amount of data, it seems that such an explanation is not necessarily correct, but rather indicates that more investigation of the index is warranted. It may also be that this index, as mentioned, may not reflect the habitat needs of fish, and so should not be given much weight in the analysis of support of beneficial use.	See response to 8.27 (Macroinvertebrates, RMI development).
Macroinverte-brates	RMI development	25	302	River Macroinvertebrate Index (RMI) metrics – As was done with the SMI, the RMI should include metrics addressing pollution tolerance.	See response to 8.27 (Macroinvertebrates, RMI development).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Macroinverte-brates	RMI methods	8	26	We are very concerned about the macroinvertebrate sampling with a Slack Sampler in a nonwadeable stream. It is our understanding that a Slack Sampler cannot be used in rivers greater than 0.3 m in depth. The middle Snake River has depths as great as 24 m.	EPA-EMAP and US Geological Survey (USGS) (NAWQA) both use Slack samplers in nonwadeable rivers. Sampling occurs in the margins at about 0.5 m depth. In developing the river sampling protocol for DEQ, Idaho State University (ISU) recommended that DEQ follow the USGS method. DEQ decided to adopt the protocol as recommended by ISU (Royer et al. 2000). DEQ has received funding from EPA to investigate the effectiveness of just sampling the river margins. Based on the results from this investigation, DEQ may decide to change the sampling protocol in a future work plan.
Macroinverte-brates	RMI methods	14	114	Chapter 5. River Macroinvertebrate Index (RMI)…sampling methods...There are substantial problems associated with sampling nonwadeable streams with a Slack sampler	See response to 8.26 (Macroinvertebrates, RMI methods).
Macroinverte-brates	SMI development	7	13	...by removing one "outlier" from the NR reference set, DEQ is now satisfied that the SMI is able to discriminate between Full Support (FS) and Not Full Support (NFS) for half the streams in the state (Fig. 3-9 and 3-10, ISSEAF and 5.5.1.3.1, WBAG II).	DEQ evaluated significant outliers and found that many of them should be removed from the least impacted or stressed group due to low number of individuals in the sample and conditions that changed the watershed prior to sampling. See also response to 7.345 (Macroinvertebrates, SMI development).
Macroinverte-brates	SMI development	7	345	Of most concern to me is the failure of the Stream Macroinvertebrate Index (SMI) and the Stream Fish Index (SFI) to reliably indicate the support status of the water body, particularly in the Northern Rockies Ecoregion (NR).	For the SMI in the Northern Mountains bioregion, DEQ concurs that the SMI apparently had less discriminatory efficiency than in other areas analyzed. Accordingly, DEQ had its contractor, TetraTech, reanalyze the SMI for the Northern Mountains bioregion using an updated list of least impacted and stressed sites. This revised list resulted in a significant increase of the SMI discrimination efficiency and changed the scoring for the northern mountains bioregion (see Section 6.4.1.). No information was given explaining why the commenter believed the SFI was less reliable in the Northern Mountains bioregion. Please see response to 7.10 (Fish, SFI development).

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Macroinverte-brates	SMI development	10	41	1. The Macroinvertebrate index is not a consistent indicator of water quality in the NR. Perhaps individual SMIs should be developed for each ecoregion.	See response to 7.345 (Macroinvertebrates SMI development).
Macroinverte-brates	SMI development	20 31	223 367	May 25, 2001 letter: . . . [DEQ] may have inadequate samples from some or all of the sites. One common problem in this arena is working with very small sample sizes (number of invertebrate per sample). … The most frequent source for this problem is processing and analysis of samples with too few individuals. July 10, 2001 letter: ... This leads to important questions such as what proportion of sites in the reference data set have fewer than 500 individuals? What is the minimum number of individuals in a sample? Is there any systematic bias in the kind of sites represented by fewer than 500 individuals? What proportion of all sites sampled (reference/least impacted or impacted sites) contain less than 500 individuals? A quick look at figure 3-7, page 3-24 of the small streams document suggests that perhaps 40 to 50% of sites were represented by sample sized below 500. Is there any skewing of those sites with respect to any natural variation or with respect to human influence gradients?	DEQ does not apply the SMI to samples with an abundance of less than 150 individuals (see Section 10.2.5.2.). Overall, approximately half of the DEQ BURP samples have total abundances in excess of 300 individuals. The commenter's concern lies in the question of insect numbers per sample site, from which an index is calculated and support status determined. Three potential explanations for low insect numbers collected from a site are: 1) naturally depauperate insect communities 2) human influences and 3) field collection. In response to the commenter's specific questions (July 10, 2001 letter), 52% of the reference data set includes less than 500 insects/site; 62 is the minimum number of insects for the reference data set and 3 is the minimum number of insects for the stressed data set; and 54% for all sites are less than 500 insects per site. The inconsistency of macroinvertebrates in streams and rivers has been noted and well documented (Rabeni and Minshall 1977, Resh 1979, Vannote et al. 1980). Insects vary in both space and time (spatial and temporal) in running waters (McElravy et al. 1989). To reduce this variability or noise, DEQ samples in riffles only, during one season annually with three replicates per site as recommended by many biomonitoring protocols (Resh and McElravy 1993). DEQ meets four of the five recommended field sampling methods suggested by Karr and Chu (1999): 1) sample smaller area; 2) sample single microhabitat; 3) collect 3 replicate samples; and 4) keep samples separate. Another accepted tenet

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
					of stream ecology and the root of the commenter's concern is obtaining enough insects to detect natural variation from human caused impairment. "Biological monitoring must separate human effects from natural variation by discovering, testing, and using those biological attributes that can be precisely measured to provide reliable information about biological conditions." (Karr and Chu 1999). For these reason and those noted above DEQ does not rely on measure or metrics of abundance, density or production. However the basic question of how many insects qualifies as adequate is still unanswered. The original Rapid Bioassessment Protocols (Plafkin et al. 1989) suggested a minimum of 100 insects be enumerated for bioassessment purposes as did others (Hilsenhoff 1977, Klemm et al. 1990). This number has recently been challenged as inadequate to allow for meaningful analysis, though some studies also find it adequate (Maxted et al. 2000). Studies by Sovell and Vondracek (1999), Courtermanch (1996) and Vinson and Hawkins (1996) point to the problems, biases and errors associated with sampling or subsampling 100 organisms. While not all researches agree, there does seem to be good evidence for not using 100 and at least using a minimum of 300. Karr and Chu (1999) recommend 500 insects be collected and identified for biomonitoring. While more is generally better, at approximately $250/per sample for identification and emmuration, costs are a concern as well. DEQ originally identified 300 organisms as part of the BURP in the early years1993-1994. Thereafter, DEQ switched to 500 to ensure at least 300 were being enumerated at the lab. Of all samples obtained between 1993

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					and 2000, 47% have greater than 500 insects. The proportion of samples greater than 300 increases to 76%, which is very reassuring. Further, the SMI data set showed that 77% of the sites with less than 150 insects were from the stressed category, suggesting inadequate sample size is not a significant problem. In addition to analyzing the stream data set, DEQ analyzed macroinvertebrate numbers in samples during the Idaho large river study (DEQ 1998) and determined that the multimetric approach was robust enough to different yield the consistent index outcomes, regardless of different sample sizes (Brandt 1997). Maret et al. (2001) reported similar findings regarding insect numbers and multimetric conclusions in their evaluation of Idaho rivers. DEQ is currently conducting a small stream variability study to evaluate macroinvertebrate, periphyton and habitat variables from the same site on a water body, over different years and within season with different crews. Furthermore, as part of DEQ's current process, and for reasons identified by the commenter, DEQ flags samples that have fewer than 150 insects present, since metrics based on these low numbers can give biased conclusions. The flagging indicates when the assessor should more carefully evaluate the sample and site to determine possible reasons for the low insect numbers (e.g. sampling, natural or human caused). The commenter's suggestion of modifying the field collection protocol when low numbers of insects are encountered (visually) has merit and will be forwarded to the BURP coordinating committee for consideration as an additional way to ensure at least 500 insects are present in any sample.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Macroinverte-brates	SMI development	30	363	July 6, 2001 letter: Idaho's macroinvertebrate sampling method is 3 Hess samplers in random locations of a riffle, and subsampled until 500 organisms have been identified. These methods are in Idaho's Beneficial Use Reconnaissance Project Workplans (e.g., 1996), and in Clark and Maret (1993), which were not cited in the Guidance, but probably should have been.	This comment was a rebuttal to comments 20.223 and 31.367 (Macroinveertebrate, SMI development). Although DEQ did not request this rebuttal, we appreciate this further clarification.
Macroinverte-brates	SMI development	20 31	224 368	May 25, 2001 letter: . . . substantive problems can also derive from multiple small errors [appropriate detection thresholds indicating degradation; reference sites selection; classification scheme; percentile breakpoints; and sample size]. That is perhaps the worst and also the most likely scenario. . . and it all derives from a sequence of decisions made, each with good intent, but that in the aggregate result in considerable potential for flawed results that would foster stream degradation even under what is in many respects a strong program. July 10, 2001 letter: . . . Nothing said in the rebuttal document leads me to believe that all four of the dimensions just described are irrelevant. That is not to say that an appropriate documentation of methods and study of index structure and sensitivity could not rule one or more of them out. But if they are all ruled out, that leaves us with an index that is not able to detect the degradation that is arguably the most important to detect.	DEQ concurs that significant problems can arise from multiple small errors. To reduce this risk, DEQ has stringent documentation requirements, quality assurance, data standards, and procedures to apply WBAGII policies. Secondly, DEQ uses a minimum of two indices which strengthens the assessment outcome. Looking at multiple lines of evidence greatly improves the power of the process and DEQ's confidence in the assessment conclusion. DEQ continues to analyze its data for sources of error and consequently improve its assessment process. Additionally, DEQ has requested and received numerous peer reviews by nationally recognized experts. These reviews have significantly reduced sources of error in the multimetric approach. Also, see responses to 20.223, 7.345 (Macroinvertebrate, SMI development) 20.22 (Index integration, scoring support determination).
Macroinverte-brates	SMI development	30	362	July 6, 2001 letter: Compounding of multiple errors . . . is reasonable if evidence exists that the above assumptions are true. Since they are false, this final assumption is also false.	This comment was a rebuttal to comments 20.224 and 31.368 (Macroinveertebrate, SMI development). Although DEQ did not request this rebuttal, we appreciate this further clarification.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Macroinverte-brates	SMI development	25	279	No comfort should be taken from the fact that the SMI was better able to separate intact from degraded sites in the Central/Southern Mountain and Basins bioregions than in the Northern Mountains Bioregion. As discussed in previous paragraphs, the reference conditions for the SMI even in the Central and Southern Mountains Bioregion is too broad to be useful and/or the percentile rule standards are set too low.	Based on additional analysis performed recently, DEQ believes the new percentile rule standards for all the stream indexes are set appropriately. The analysis was based on balancing Type I/II errors and discrimination efficiencies. For a more thorough explanation of the scoring approach, please refer to Section 6.4. Regarding the reanalysis of the SMI in the Northern Mountains bioregion, please refer to response 7.345 (Macroinvertebrates, SMI development).
Macroinverte-brates	SMI development	25	295	As was discussed at length under concern #6, above, the inclusion of questionable sites as references may have skewed the SMI. This failure to adequate discriminate in the selection of reference sites likely is a significant contributor to the problems with accuracy, especially in the Northern Mountain Bioregion.	See responses to 7.345 and 25.279 (Macroinvertebrates, SMI development).
Macroinverte-brates	SMI development	25	296	In addition to the specific metrics included in the SMI, and displayed in Table A-2, there is support for the inclusion of the following metrics relating to composition and pollution tolerance: number and percent of taxa intolerant of high organic loads and oxygen depletion; number and percent of taxa that are tolerant of sediment; and percent chironomids (Mauger 1997). These additional metrics should be evaluated to determine their utility.	TetraTech evaluated and selected metrics that performed the best in a statewide index because the SMI is applied statewide. The current SMI shows a balance of Type I/II errors and high discrimination efficiencies for all the bioregions. As DEQ collects more data and more research is available on indicator taxa, we may investigate incorporating additional metrics for particular bioregions such as the fine sediment index (Reylea et al. 2000). Such an investigation would be dependent on administration priorities and available resources.
Macroinverte-brates	SMI development	29	347	Often times, a site changed categories (good to fair to good) from one year to the next. This occurred both at reference and potentially impacted sites, suggesting that natural variation alone is sufficient to cause a site to change categories through time. It may be more beneficial to simply define the impaired state instead of trying to fit streams into five categories of stream "condition".	DEQ's scoring approach is in agreement with this comment. We do not use five categories of stream condition for the SMI, but instead assign three condition ratings. We use these condition ratings to integrate the other index condition ratings before making a final determination. The final determination is either fully supporting or not fully supporting (see Section 6.4.2.2).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Macroinverte-brates	SMI methods	6	8	…[regarding Macroinvertebrate Indexes] include a similar section (see enclosed) like pp. 50-54 in the 1996 Guide. I would like to see (and I do need): 1) a map showing Ecoregions for the state…2) Rating categories for index scores…3) diagnoses of each of the nine metrics with proper formulas and explanations of what each contributes to the overall score…4) what about explaining the 5th and 95th percentiles---are the numbers you will list for best metric scoring in each ecoregion for each of the 9 metrics going to be based on the 5th or 95th or for the 100th percentile (like 1996) and we have to do the math? 5) adding up the metrics to reach a final score to indicate …or will there be new or revamped categories?	The information requested in this comment may be found in the Idaho Assessment Framework for Small Streams (Grafe 2002 b) for items 1 through 3. This technical document provides more specifics regarding metrics and corresponding calculations. Information regarding scoring methods (i.e., items 4 through 5) may be found in Section 6.4 of WBAG II.
Macroinverte-brates	SMI methods	16	154	SMI...Page 3-31: IDEQ states that discrimination statistics in the Northern Mountains distinguished between reference sites and impaired sites only 29% of the time. This level of precision is inadequate for sound management and further work is needed to identify metrics for this region.	See responses 7.13 and 7.345 (Macroinvertebrates, SMI development).
Macroinverte-brates	SMI methods	21	234	The MBI scores for the reference streams in each ecoregion seem to have a very large amount of variation. Perhaps this indicates that either the reference reaches were not property selected or smaller ecoregions should be used.	Variability is to be expected when developing biological reference conditions, especially at a statewide scale. Please see responses 11.50 (Reference, site selection) and 25.274 (Reference, site selection) for further discussions on this topic. In using a bioassessment tool, DEQ is concerned with how well the tool discriminates between impaired and not impaired water bodies. For this objective, TetraTech found the SMI to perform extremely well, particularly after the Northern Mountains bioregion was reanalyzed using a new set of least impacted and stressed sites (see response 7.345 (Macroinvertebrates, SMI development)). TetraTech also evaluated other classification methods and found the grouping of ecoregions performed the best for the data set available. Work by DEQ and EPA has recently yielded

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
					finer resolutions of ecoregions (McGrath et al. 2001). DEQ will likely investigate these ecoregions to determine their utility for index classification purposes. Such an investigation would be dependent on current administration priorities and available resources.
Macroinverte-brates	taxa list	12	72	Pg. 5-6-Last paragraph..DEQ should include in this document a specific list (subject to change as new information comes available). It should not be left up to individuals to search out and interpret information from various sources.	DEQ has included the most current macroinvertebrate taxa list in WBAG II and intends to provide updates of the list on the DEQ Web site (http://www2.state.id.us/index.htm).
Macroinverte-brates	taxa list	25	342	but failed to display which of 130 species collected through the BURP program other than Rhyacophila could be considered cold water indicators, or indicators of other aquatic life beneficial use. This internal information should be made available in the final document with the inclusion of a list of macroinvertebrate species indicative of cold water, seasonal cold water, or warm water aquatic life use. Similarly, fish indicator taxa should be included in the final WBAG II, with the mottled sculpin included as a cold water indicator per the discussion in the proposed document on this subject.	DEQ has included the most current macroinvertebrate and fish taxa lists in the WBAG II appendices and intends to provide updates of the lists on the DEQ Web site (http://www2.state.id.us/index.htm). See response to 12.72 (Macroinvertebrates, taxa list) and Appendices A and B of the WBAG II.
Other waters	develop process	11	62	...condition of seeps, springs, wetlands, and other non-riverine riparian systems. Western Watersheds Project requests that DEQ recognize and act on this critical need and work towards the development and implementation of a process for assessing these critical surface waters and their attendant riparian habitats.	We agree that guidance is needed in these areas. Due to limited resources, DEQ has prioritized the development of different guidance documents. Since most of Idaho surface water would be classified as streams, DEQ sought to develop sound assessment methods for these water bodies first. As resources and administration priorities allow, DEQ will develop additional guidance to address other water body types. See responses to 11.57 (Habitat, SHI development) and 25.253 (Other waters, intermittent, springs, lentic waters).

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Other waters	ground water	2	5	where is the draft document for assessing “ground water”? Specifically, under industrial sites.	The DEQ Source Water Assessment Program (SWAP) comprehensively addresses ground water issues. WBAG II is designed to assess streams and rivers; however, there is coordination with SWAP when assessing the water supply beneficial uses (see Section 8.1).
Other waters	intermittent	16	143	Thus, streams that were formerly known to support salmonids must be assessed even if they are not currently perennial.	Idaho water quality standards state that numeric water quality standards only apply to intermittent waters during optimum flow periods sufficient to support the uses for which the water body is designated. For aquatic life uses, optimum flow is equal to or greater than one cfs (WQS § 70.07). If salmonid spawning is a designated or existing use, even if it is not currently supported, then numeric water quality data would be assessed if that data were collected during optimum flow periods.
Other waters	intermittent	21	227	This WBAG like the last, only deals with perennial streams. Intermittent streams need to be classified and assessed as well. What protocols are in place to deal with drought years and de-watering of perennial streams?	See responses to 17.181 (Appendix G, Other waters, intermittent) and 11.62 (Other waters, develop process).
Other waters	intermittent springs lentic waters	25	253	The proposed WBAG II is limited to perennial, lotic water bodies, despite the explicit recommendation in USEPA (1997) that the gap in the State’s WBAG I decision process with respect to “intermittent streams, springs, and lake outlets” be filled. The proposal explicitly does not cover lentic waters (such as lakes, springs, ponds, wetlands and reservoirs) or temporary waters (such as vernal pools and intermittent streams)…The proposed WBAG II should establish comprehensive protocols for determining the beneficial uses of these water bodies and for assessing whether these uses are fully supported.	See responses to 17.181 (Appendix G, Other waters, intermittent), 11.62 (Other waters, develop process), and 11.51 (Reference, site selection). DEQ has a lentic (lake and reservoir) monitoring protocol (Hoelscher 1997). We are currently developing an assessment protocol for these waters. However, the methodology is not complete and could not be incorporated into WBAG II.

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Other waters	intermittent streams support determination	11	63	As a majority of Idaho's intermittent streams or stream segments were historically perennial, DEQ should consider a standard designation of "impaired" or "not supporting" for waters that are no longer allowed to function properly- even if the cause is another beneficial use such as "agriculture"...WWP believes that a loss of perennial flow should result in a categorical designation of impaired due to loss of instream habitat, fisheries, values, etc.	While many factors may contribute to a stream ceasing to be perennial over time, the two main factors, climate and permitted diversion, are beyond the purview of DEQ (see response 11.54 (Habitat, SHI development)).
Overall	biological criteria	15	133	Small streams...Page 31, Sec. 3-1...If this bioassessment program is to be used for measuring the quality of streams, then its biological standards should be used instead of numerical water quality standards. The biomass assessment program should be flexible enough to allow for biological standards that can be quantitatively substituted for numerical standards with a water body's designated use as long as the use is being met. We like the bioassessment program if it allows for these new standards that will allow for designated beneficial uses based upon biological criteria standards. But the standards should not be more stringent than what the quantitative or numerical water quality standards are.	WBAG II addresses current water quality standards. Comments regarding particular water quality criteria are beyond the scope of this public comment request and should be addressed in the water quality standard rulemaking process.
Overall	CALM	14	97	The WBAG II does not mention this process in relation to how it may affect assessment methods in Idaho. It is our understanding that the final CALM guidance will be completed this summer, and thus it would be appropriate for DEQ to defer adoption of the WBAG II framework at least until after the CALM process is complete.	DEQ is part of a national workgroup assisting EPA in the development of CALM. With the information from this workgroup, we have tried to incorporate into WBAG II what we believe will be the key elements of CALM. DEQ has reviewed a preliminary draft of CALM and ensured the WBAG II meets requirements in this draft. Presently, DEQ is unsure of the role CALM will play in assessment and 303(d) listing processes. DEQ will proceed based on current available information until definite EPA policies have been issued.
Overall	CALM	14	98	Thus, the WBAG II process needs to include a mechanism to be able to respond to potential changes that may be dictated by actions at the national level.	See response to 14.97 (Overall, CALM).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Overall	general	2	3	Technically, it appears that this draft document is thorough and meticulous....the process should be able to be simplified.	DEQ understands this concern and has taken several steps to simply the process and make it more understandable. First, this guidance has used a more narrative format to explain policies and procedures more comprehensively. Further, DEQ conducted educational workshops to improve understanding of the process and is also conducting follow-up workshops with interested parties. Specific suggestions on how the process could be simplified would be appreciated.
Overall	general	7	16	The entire approach of WBAG II is to see how close to the carrying capacity Idaho will allow a stream to degrade. Then go “oops”.	The purpose of WBAG II is to identify impaired waters that do not meet water quality standards and may require a TMDL. Although detecting different levels of degradation can be a helpful resource management tool, this level of analysis is beyond the current scope of WBAG II.
Overall	general	9	32	[see Dr. Karr's comments] Dr. Karr raises a number of concerns--concerns shared by our clients--regarding significant problems with WBAG II in its current form. Dr. Karr concludes that, unless substantial improvements are made, WBAG II allows for unacceptable levels of degradation in water quality.	Dr. Karr's comments were focused on the development of the SMI and were addressed individually. Dr. Karr’s specific comments are associated with correspondence identification numbers 20 and 31
Overall	general	11	52	1. Are the assessments progressing fast enough to identify impaired waters before “it becomes too late” for many of the states waters and wildlife species? Can the process be accelerated? Should DEQ be stressing the need to end incompatible land and water uses?	DEQ has primarily assessed water bodies according to when a 303(d) list was due. Some water bodies are assessed before this for particular subbasin assessments. Development of subbasin assessments occurs annually. DEQ understands the benefit of assessing waters more frequently, and will investigate different methods to automate some procedures and make the assessment process more efficient. Such efficiency would allow more frequent assessments.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Overall	general	11	55	4. Many interested publics feel that the 303(d) and TMDL process is geared to “allowing” degradation. Can the system be made more resource responsive and less tolerant of abuse? Is DEQ following up on enforcement of current TMDLs? Will DEQ be able to physically carry through with increased future 303(d) listings and TMDL developments?	DEQ is addressing comments specific to WBAG II. Comments regarding TMDL implementation are beyond the scope of this document and public comment request.
Overall	general	20	218	May 25, 2001 letter: Idaho has ... moved to strengthen their monitoring and assessment programs. They are … ahead of Washington in this regard. They, for example, use multiple assemblages (fish, invertebrates, algae) in ways that broaden and thus strengthen their ability to track resource condition. They establish protocols for study design and data collection. And they have moved forward to collect data from throughout the state in ways that only a few other states have done. They also have developed a rigorous approach to the selection of metrics to be used in their multimetric indexes (IBIs). Few states have done this well! Their work on the development of a river IBI based on algal assemblages is especially commendable.	DEQ appreciates the comment.
Overall	general	21	233	The entire process of determining beneficial uses and making 303(d) listings seems to be left in large part to regional personnel who conduct the assessments. What checks and balances are in place to assure these individuals are making the proper calls on Idaho's waters?	Regional assessors must provide sound written justification if they believe additional information should change preliminary assessments using WBAG II procedures (see Section 4.4.).
Overall	general	25	258	In their review of WBAG I, the Environmental Protection Agency explicitly criticized the document for relying primarily on subjective judgments as to whether biota have been impacted and directed the DEQ to establish water quality criteria that are clearly defined in a non-subjective manner (USEPA 1999). This was not uniformly done in the proposed WBAG II.	WBAG II addresses current water quality standards. EPA recommended DEQ establish a criteria exceedance policy based on objective criteria. DEQ used EPA's recommended approach to develop this policy. Please see Section 5 of WBAG II for policy details. Throughout the document, we refer to this specific policy to ensure uniformity.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Overall	not assessed	21	235	DEQ needs to provide guidance on how "not assessed' stream reaches are going to be addressed in the 303(d) listing process and needs to clearly define when these segments will be sampled and/or assessed.	The specifics of all 303(d) listing decisions will be provided in the 303(d) listing guidance (in preparation). Some of these policies are based on EPA's most recent integrated guidance for 303(d) listing (Sutfin 2001). DEQ is continuing to develop monitoring strategies to address all streams statewide, including those not currently assessed.
Overall	not assessed	25	286	If data are not available to support reaching a determination, the provisions of the Clean Water Act are short-circuited. Because this situation is likely to occur with appalling frequency, the proposed WBAG II should include conservative provisions that will ensure protection of water bodies where a use support determination can not be made during the interim period when data are collected.	See response to 21.235 (Overall, not assessed).
Overall	peer review	22	239	The technical peer review did not include scientists from the Idaho Department of Lands and private timberland owners .	DEQ did not have an outreach program for WBAG II preparation but instead requested technical peer-review from outside DEQ and often outside Idaho. To increase objectivity, the document was generally peer-reviewed by technical experts not immediately affected by the process. Public outreach occurred during the public comment period. DEQ conducted interviews to determine main issues, ran educational workshops, and had an extensive 120-day public comment period. Representatives of private timberland owners (Terry Cundy and Jane Gorsuch) were interviewed as part of the pre-workshop interviews, and also attended the workshops to provide public comment.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Overall	public outreach	21	226	Why were only 20 interviews conducted for the pre public scoping? The information provided indicates that Tribes were interviewed, which tribes were contacted? Why weren't all Idaho Tribes contacted?	DEQ conducted pre-workshop interviews only to identify top issues and focus presentations for educational workshops. The interviews were not part of public comment but were conducted in preparation for the workshops. About 30 interviews were conducted among different interest groups such as other agencies, Tribes, timber, agriculture, water users, municipalities, and environmental groups, etc.
Overall	site specific	14	106	We fully support the premise that flexibility and sound scientific judgment will at times be needed on a site specific basis. We strongly recommend that the WBAG II highlight this point in additional appropriate places, and more importantly, that the River Framework and Stream Framework also include that language in a very prominent and explicit way.	Idaho water quality standards do allow for site specific criteria. For rivers with extensive hydromodification, DEQ concurs that reference sites for these waters should be established on a case-by-case basis (see Section 6.1.4). (Also see response 8.19 (Reference, river methods).
Overall	terminology	11	46	Use of term “fully supporting”… it was recommended that the terms be changed to fully supporting and “not supporting” to eliminate confusion for the public.	DEQ agrees with this comment; however, "fully supporting" and "not fully supporting" is the terminology used in the water quality standards (WQS § 03.40) and therefore is used in WBAG II.
Overall	threatened waters	24	252	In fact, the Guidance sets forth no mechanism for identifying and assessing threatened waters (waters not expected to meet standards within two years), as federally required. The final Guidance must address this threatened waters void.	The draft CALM and preliminary EPA notice appear to be eliminating the "threatened" category. From preliminary EPA guidance, it appears there will be other assessment categories. DEQ will act on current available information.
Overall	water quantity	11	54	3. Without any control of water quantity, are 303(d) listings and TMDLs really realistic? Will WBAG II be able to positively affect resource quality without this authority or ability?	Idaho regulations specifically state that the water quality standards are not intended to conflict or interfere with water rights or apportionments (WQS § 50.01). The Idaho Department of Water Resources (IDWR) has the legal authority to handle water rights and apportionment of water. This comment is beyond the scope of WBAG II, which addresses current Idaho regulations and water quality standards.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Overall	water quantity	11	64	7. The most critical habitat factors for fish and other aquatic life are the connected but DEQ/WBAG II unaddressed issues of water quantity, instream flow, and the dewatering or loss of in-stream water sources. Although outside of the scope of WBAG II, this issue is further discussed in the next section.	See response to 11.54 (Overall, water quantity).
Overall	water quantity	11	65	It is absurd for the State of Idaho to assume that its own agency, the Department of Environmental Quality, can adequately discharge its legal responsibilities in regards to the CWA, ESA, and other issues without allowing it the ability to assess and address water quantity.	See response to 11.54 (Overall, water quantity).
Periphyton	RDI	14	103	River Diatom Index (RDI): As noted in the River Framework, the use of diatoms as an indicator of use attainment is in its infancy in the United States and Idaho. Thus, we believe that the individual metrics and the overall index require more scrutiny and validation before they can be confidently used and accepted by stakeholders in Idaho.	Currently, a draft manuscript is being considered by a peer-reviewed journal. Additionally, this index has been independently reviewed by Loren Bahls, Jan Stevensen, Ellen Chu, and other national experts. DEQ believes the analyses and peer-review feedback support inclusion of the RDI in the assessment process.
Periphyton	RDI methods	25	278	Rating the RDI scores was further confounded by the identification of a limited number of reference sites, and a failure to define a minimum threshold.	Fore and Grafe (2000) did not believe that the statistical power analysis supported the development of a minimum threshold category at this time. This may be possible to determine in the future based on additional data. Understandably, there were fewer reference sites used in the analysis since there are fewer large rivers than small streams in Idaho. However, the reference sites used in the RDI development were based on major river systems in Idaho.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Physico-chemical	RPI	14	104	Rivers Physicochemical Index (RPI): The is RPI based on the OWQI. The OWQI is used internally only by ODEQ, primarily for trend analysis. It never went through a public review process and is not used for regulatory decisions.. The WBAG II needs to correctly describe the OWQI and its uses. Additionally, we suggest that if it is retained in the WBAG II, it be used just as in Oregon until it is substantially revised to provide a greater level of rigor.	The Oregon Water Quality Index (OWQI) has not gone through public review, but it has been reviewed extensively by Oregon DEQ (ODEQ) staff as well as peer reviewed prior to its publication in the Journal of American Water Resource Association (Cude 2001). The ODEQ does not currently use the OWQI for regulatory decisions; however, this is not due to a lack of confidence in the process, but due to a policy decision. ODEQ uses the OWQI to determine cumulative effects of several water quality conditions that individually may not result in a criteria violation, but in conjunction with several other parameters can result in stress to the aquatic environment.
Physico-chemical	RPI	14	122	RPI...? We strongly recommend that the RPI be abandoned as a tool for water body assessment guidance or any other regulatory purpose. That isn't to say that IDEQ can't use the RPI or some variation as a trend analysis tool on an informal, internal basis (as it is used in Oregon), but it should not be included in the WBAG II process. It is unnecessary and erroneously seeks to provide an assessment tool that is redundant with, and scientifically inferior to, existing numeric criteria.	DEQ did not intend the RPI to be disassembled into its component sub-indexes, but instead as a complete index to determine the physical/chemical condition of the water body. The RPI is not an attempt to establish water quality criteria. Furthermore, the RPI is not intended to replace existing water quality criteria. The values and shapes of the curves used in the RPI are derived from principles of aquatic ecology and water quality pollution that are typical of water quality impairment. Nonetheless, DEQ has removed the RPI from the river index integration for aquatic life use support determination (see 6.4.2.). DEQ still believes the RPI has value as an interpretive tool and may be used in other water quality decisions.
Physico-chemical	RPI development	14	118	RPI...Existing Approach Using Numeric Criteria Should Be Retained:	See response to 14.122 (Physico-chemical, RPI).
Physico-chemical	RPI development	14	119	RPI...OWQI.... We point out that the OWQI has never been subjected to public comment in Oregon, and is not used for any regulatory purpose such as 303(d) listing.	See response to 14.104 (Physico-chemical, RPI).

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Physico-chemical	RPI development	14	120	RPI...The "testing" process for Idaho rivers that is described in the Framework is not technically defensible because: 1) there is an inadequate sample size for the comparisons of the RPI to the RDI and IRI And 2) there is no clear relationship between the RPI and percent agriculture (an R2 value of 0.22 is not robust enough from a practical perspective despite possible "statistical significance"). The RPI versus "professional expectations" chart also shows an unacceptable degree of scatter for the intermediate and lower scores. Plus, the outcome of that "professional expectations" evaluation was that a score of 80 or greater is needed for unimpaired status. The use of 40 as a threshold value also has no legitimate scientific basis.	DEQ believes additional analysis is warranted because testing was very limited. Limited testing was due to the sparse data that exists on Idaho rivers for these parameters. DEQ desired a methodology to address physicochemical data supplied during the 303(d) data request period. Although the explanatory power of the RPI is not extremely high, it is not untypical of other indexes. The break points and threshold levels are based on a power analysis of the data presented. The power analysis reduces the possibility of a river being misclassified.
Physico-chemical	RPI development	14	121	RPI...The effects of solids and phosphorus are highly site specific, and thus the subindex curves for these parameters are arbitrary	The effects of solids and phosphorus are highly site specific; however, it is generally accepted that elevations of these parameters are indicative of water quality impairment. The RPI is not intended to replace or supercede detailed analysis of water quality parameters that would occur in sub-basin assessments, TMDLs, or other detailed water quality reports. The RPI, like the other indexes in the WBAG, are intended as screening tools to direct DEQ's efforts.
Physico-chemical	RPI development	16	163	Chapter 6. River Physiochemical Index...Table 6-1. That table, however only lists six parameters. What are the missing parameters? Why were they not included? We agree with the assessment that this index needs more research. We suggest that this be kept in mind when doing beneficial use designation and support analyses on rivers.	All eight parameters were in the document, however, the first two were incorrectly formatted and appeared as column headings not as parameters. The document has been revised accordingly. We concur that additional testing and analysis of the RPI needs to occur and the RPI should be used with caution. See response to 14.122 (Physicochemical, RPI).

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Physico-chemical	RPI development	25	301	River Physicochemical Index (RPI) metrics – In addition to the eight water quality parameters included in the RPI, consideration should be given to inclusion of turbidity and suspended sediment, nutrients, and toxics. They were identified by Bauer and Ralph (1999) as potential variables.	The parameters you mentioned, except for toxics, are all included in the RPI. Toxics are addressed when the toxic criterion is exceeded (WQS § 210).
Physico-chemical	RPI methods	8	28	Concentrations are again dependent on water volume. Volume will vary as water flows are managed on hydrologically modified rivers. This creates an unfair and biased weighting.	Concentration is often related to stream flow. The intent of the RPI is to assess river condition, not to determine the cause of the impairment. If further data analysis from a subbasin assessment or detailed watershed analysis determine flow as the cause of the water quality condition, then flow as "pollution" is addressed in a different forum (Sutfin 2001). Also, see response to 8.19 (Reference, river methods).
Physico-chemical	RPI methods	8	29	What happens if only a few of the physical or chemical parameters of the RPI are available? Mathematically it would appear that the known parameters take on excessive perhaps unintended weight.	Page 6-3 indicates the requirement that the assessor must have six of the eight parameters to use the RPI.
Physico-chemical	RPI methods	8	30	It is also not at all clear how certain phosphorous concentrations should be viewed.	See response to 14.122 (Physico-chemica, RPI).
Physico-chemical	RPI methods	8	31	It appears to be a back-door approach to establish nutrient limitations in the absence of public debate or scientific scrutiny as to what nutrient concentrations or loads are significant.	See response to 14.122 (Physico-chemica, RPI).
Physico-chemical	RPI scoring	25	343	Despite application of the same percentile rule, the two river indexes that are standardized to 100, the River Fish Index (RFI) and River Physiochemical Index (RPI), appear to require a higher effective standard be met than is required for the three standardized stream indexes.	Although the indexes are adjusted using the same percentile rule, the actual index break point was dependent on the variability of the data and analysis performed to distinguish between condition classes. Also see response to 25.277 (Fish, RFI scoring).
Public involvement	outreach	22	238	The outreach program in preparing the document did not include water quality and fisheries specialists from private timber companies with large land ownerships.	See response to 22.239 (Overall, peer review).

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Reference	river methods	8	19	The challenge is to ensure that the standard or reference water body chosen is appropriate. For 1st, 2nd, and 3rd order streams, an appropriate standards appear available. For 4th and 5th order rivers and reservoirs, a reference is a remains a significant challenge. Chris Mebane acknowledged these difficulties in his oral presentation and the River Assessment Guide also acknowledges the difficulties. Yet, the River Assessment Guide also states that it is nevertheless appropriate to use the bioassessment process throughout the state to evaluate large rivers. We strongly disagree suggesting instead that the WBAG should not be used for large water bodies until alternate procedures are established to assess the status of their aquatic life use.	The selection of appropriate reference for large rivers and reservoirs is indeed difficult. Nonetheless, DEQ believes the basic concept of a reference condition is still sound if viewed as a benchmark for the water's potential quality given that it is an impoundment or flow regulated river. DEQ agrees that unaltered or pre-European condition is not appropriate for reservoirs and highly regulated rivers, and instead proposes a case-by-case benchmark be selected that best represents the potential for waters with a high degree of hydrologic modification due to dams and diversions. This benchmark is for the purpose of the multimetric index application only. Numeric criteria associated with designated uses still apply. The WBAG II has been revised to address this situation (see Section 6.1.4.).
Reference	river methods	8	20	The lack of suitable reference conditions for water bodies such as the middle Snake River is of most immediate concern. The Snake River and other similar rivers have a significant number of dams that allow water flows to be managed. These hydromodifications dramatically alter system hydrodynamics and hence the entire ecosystem.	See response to 8.19 (Reference, river methods).
Reference	river methods	8	21	The State and this draft WBAG seem intent on using water bodies not subject to significant managed water flows as the reference condition for water flow managed rivers. This creates a significant biological and ecosystem disparity that cannot be reconciled. The result is a biological expectation for the dammed rivers that can never be attained...waste load allocations (WLA). Admittedly, it is hard to envision how water flow itself could be subject to a WLA. Yet, by ignoring the impact of hydromodification in the WBAG and in TMDLs, the state automatically places a large hydrologically modified river in the non-attainment category.	See response to 8.19 (Reference, river methods).

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Reference	river methods	8	22	The lack of a suitable reference condition invalidates the RMI, RDI, RFI, and RPI currently proposed. Water bodies in designated wilderness and national Forests do NOT provide suitable reference conditions because of the lack of managed water flows in these areas. While it might be nice aesthetically to have rivers of the 1800s, as suggested in the River Assessment document, this is not realistic in Idaho and violates the Clean Water Act requirements to achieve aquatic life uses present after Nov. 1975.	See response to 8.19 (Reference, river methods).
Reference	river methods	14	101	More Complete Set of Reference Conditions Needed: The reference conditions used in development of the various indexes are indicative of near pristine, natural (or minimally impacted) systems. This does not recognize that some rivers in Idaho cannot, and should not be expected to, attain these conditions. As noted earlier in these comments, federal and state programs require only that best attainable conditions be achieved and maintained. This is further discussed in our Specific Comments.	See response to 8.19 (Reference, river methods).
Reference	river methods	14	111	Additional Reference Sites Needed...The reference sites selected tend to be rivers minimally impacted by hydrologic modifications such as dams and diversions and other anthropogenic influences. Although we understand why those systems would have been sought out as reference sites for this class of large river, their exclusive use relegates systems with substantial hydromodifications to a permanent non-attainment status (assuming that these hydromodifications are relatively permanent).	See response to 8.19 (Reference, river methods).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	river methods	14	112	Site Specific Criteria Option...Another approach to deal with these types of systems is to establish reference conditions that are more appropriate to rivers subject to major hydromodifications. This would likely be best accomplished on a site-specific basis rather than attempting to develop one state-wide references condition that may not work in all cases.	Although not an easy path, DEQ agrees and will be looking to establish more water body specific reference sites for waters with a high degree of hydrologic modification due to dams and diversions. See also response to 8.19 (Reference, river methods).
Reference	river methods	14	113	We would be willing to work with DEQ to develop such site specific reference conditions, which should be incorporated into the WBAG II or River Framework documents.	DEQ welcomes the commenter's suggestion to help with the selection process. While WBAG II now contains guidance for water body specific reference conditions for hydromodified rivers (see Section 6.1.4.), the actual selection of such sites will come later during the assessment process.
Reference	river methods	15	131	Rivers...Page 23, Section 2-1. Where does 40 CFR 131.10 (g) rules and regulations fit in the exemption of water quality standards for reservoirs and water bodies? How far does the exemption extend? Most of the listed rivers sections are below man-made reservoirs and dams so they would be regulated by state and federal law as it applies to storage water rights or hydropower rights. How will the reference river conditions be incorporated so there is not a violation of other state laws which may pertain to these or similar uses.	Section 131.10 (g) of 40 CFR establishes the considerations for use attainability analysis, subsection (4) specifically addressing dams and diversions. If a designated use does not exist or is not supported, DEQ is open to consideration of attainability. However, DEQ presently does not have the resources to develop extensive use attainability studies, and in any event, needs to follow the 'tests' provided in 40 CFR 131.10(g). See also response to 8.19 (Reference, river methods).
Reference	river methods	15	132	Rivers...Page 43, section3-15. The large body assessment should not be adopted until more information can be obtained and better criteria established for a reference river for comparison. I concur with Cindy's opinion that the large river reference will be difficult to identify. One question that comes to mind is will the large river reference condition will be based upon natural flows or will regulated flows be the basis for the river condition? The next question that comes to mind is would the aquatic species that exist with regulated flows be impacted negatively or positively with unregulated flows.	See response to 8.19 (Reference, river methods).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	7	12	scattershot and entirely subjective method of determining reference conditions.	In the absence of pristine or pre-european conditions as a benchmark, the choice of reference conditions is indeed somewhat subjective. DEQ used a standard set of criteria designed to support all beneficial uses, based on the recommendations of Hughes (1995) to guide the a-priori selection of reference sites. This is an established and accepted approach to selecting reference sites.
Reference	site selection	10	34	Scoring the relative condition of habitat components, rather than using questionable "reference" stream conditions as a basis, should be explored, especially given the fact that so-called reference condition streams include many that suffer from some level of degradation.	DEQ is uncertain about what is meant by scoring the relative condition of habitat components, but has found that rating habitat conditions can be overly subjective. DEQ stands by its reference site selection as a well established and defensible approach of determining reference conditions for its biological metrics. Reference sites may include some change in water quality from pre-European conditions, so long as beneficial uses are supported. See also response 17.174 (Appendix G, Reference, scoring support determination).
Reference	site selection	10	42	D. The reference stream choices appear to be arbitrary and biased toward full support. ...The WBAG II scoring regime is arbitrary and weighted toward finding FS. This is partially due to inclusion of degraded sites in the "reference stream condition" on which the index scoring is based. (See Dr. James Karr's comments, incorporated here by reference.) The lists of reference streams for the SFI (Appendix G) and the SMI (Appendix C) clearly include many sites that are degraded.	See responses to 17.174 (Appendix G, Reference, scoring support determination), 7.12 (Reference, site selection), and 10.34 (Reference, site selection). While there were less than pristine sites among our reference sites this does not invalidate their use as reference.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	10	43	"least impacted" streams were selected for the SFI. ISSEAF at 4-17, 4-18. They were selected on the basis of professional judgment calls by DEQ and IDFG (for rangeland streams), they also include streams in an old (1995) study of least-disturbed streams and some NAWQA sites based on "discussions with study team leaders". Table 4-3 - Factors considered for classifying reference sites is indicative of the weak criteria that was used to define least impacted. These criteria were apparently also used for the SMI reference streams.	See responses to 17.174 (Appendix G, Reference, scoring support determination) and 7.12 (Reference, site selection).
Reference	site selection	11	47	1. How accurate and representative are the choices for reference sites? Are they truly representative enough to base 303(d) listing or other actions on?	In the stratification of water bodies necessary for construction of broadly applicable multimetric indexes, there is a trade-off between accuracy and representativeness. Given the resources available for this effort, DEQ believes it has struck a good balance. Our reference sites are representative and will be used as the basis for 303(d) listing decisions. See also response to 7.12 (Reference, site selection).
Reference	site selection	11	48	2. How accurate can a reference site be if a majority of adjacent or contributing watershed values are impacted or essentially missing?	It is unknown what watershed values the commenter is referring to, so we can not answer this without a specific example.
Reference	site selection	11	49	3. If watershed values are impaired, this is reflected in the river continuum and in the numbers or types of organisms present (Brewer 1994, Odum 1971, Rabe 1996, IDFG 2001). Might this then render a reference site (SMI or RDI type data) inaccurate for other sites representing differing levels of watershed disturbance?	Reference is not a monolith and pristine watersheds are not the only qualifier as a suitable benchmark for reference condition. Granted there is some inaccuracy, due to necessity in getting broadly applicable indexes. See response to 11.50 (Reference, site selection).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	11	50	4. Are site-specific situations so numerous as to render the use of general state reference sites inaccurate or impractical?	No. The narrower the range of reference conditions, the better for bioassessment. However, to narrow the range of reference requires finer stratification and larger sample sizes, two opposing objectives. We necessarily need to strike a balance, especially when trying to craft a multimetric index useful across broad geographic areas for coarse filter application (e.g. reconnaissance) within limited time and budget. In part, the price we pay for a more broadly useful biological index, is less precision or sensitivity. DEQ made this trade-off consciously to better meet our objective of assessing all the waters of the state. This a very practical approach given our resource limitations.
Reference	site selection	11	51	5. Although DEQ is responsible for watershed level assessment; will small watersheds or unique drainage systems be allowed to "slip through the cracks" or be improperly labeled as impaired (or fully supporting) due to budget or personnel constraints and/or due to comparison with generalized reference sites?	DEQ attempts to avoid this, but recognizes that this is a risk in application of any generalized assessment methodology. Somewhat unique or special waters that DEQ is cognizant of are lake outlets and spring brooks. DEQ would apply its stream or river metrics to such waters cautiously, if at all. We hope to work on more tailored assessment methodologies as budget and time permit.
Reference	site selection	11	59	If dependent on particular reference sites, might this then render fisheries or habitat values (SFI or SHI type data) inaccurate for other sites representing differing levels of watershed disturbance?	See response to 11.49 (Reference, site selection).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	12	77	Pg. 5-8-Third paragraph…"The limitation to waters that have not been substantially altered from their reference condition…" Comment: It is unclear how the concepts expressed in this paragraph relate to the legal standard set forth by the Clean Water Act that does not require that waters be returned to their pre-development condition. Put another way, we are obligated to support beneficial uses that existed at the passage of the Act-not at some unspecified period of time in history. Therefore, the reference condition for a stream draining agricultural ground that has been in production for 50 years is in fact a stream draining agricultural ground. The State should not expect, nor are landowners obligated, to have this stream be the same as an undisturbed stream. Suggestion: Obtain a clear legal opinion on the issue of returning to pre-development condition. Re-write paragraph if needed.	We did not select reference sites that represent only unaltered or pre-European conditions as we do not believe the Clean Water Act constrains reference to be pristine (waters without any human influence including recreation and aerial deposition). By the same token, we do not believe the Clean Water Act constrains us to conditions that existed at the time the rules implementing the 1972 amendments became effective (Nov. 28, 1975) as being reference conditions. Existing conditions as of 1975 considered a minimum support level, not necessarily the desired goal. See also 17.174 (Appendix G, Reference, scoring support determination).
Reference	site selection	15	127	Idaho Water Policy Group's concern about the water quality guidelines is that the reference streams, lakes, and rivers are not located within the basins or even the state for comparisons. These approaches overshadow or intimidate the general public and does not allow the public to understand the scientific approach with an air of confidence in the statistical data and reference conditions for comparison are not always a basin reference point. For comparison people need to have a reference point to make their own comparison and an approach they can understand.	The majority of reference sites are located within Idaho and are widely distributed across the state such that there are reference sites within every major river basin in Idaho. All those outside Idaho are in areas similar to Idaho.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	15	134	Small streams...Page 19, section 1-4...The weakness I saw in the biological data to be translated to assessment results was again the lack of good reference streams in each basin for each classification being used.. I would like to reiterate these approaches over shadow or intimidate the general public and does not allow the public to understand the scientific approach with an air of confidence in the statistical data and reference conditions for comparison are not always a basin reference point. For comparison people need to have a reference point to make their own comparison and an approach they can understand.	It would be advantageous to have a nearby reference stream in each basin, but the standard reference site selection criteria guide this process. See also response to 15.127 (Reference, site selection).
Reference	site selection	16	153	SMI...Page 3-3: IDEQ uses “least impacted” vs. “pristine” sites within each bioregion to establish reference conditions to which all samples are compared….A mechanism should be incorporated into IDEQ’s methodology that adjusts the values for the least disturbed sites used for comparison to the prehistoric, pristine, or minimally disturbed values. It should be established that although these sites are the least disturbed for the bioregion, they do not represent biological integrity. Although the goals of realistically attainable restoration efforts may remain below optimal biological integrity, this should be acknowledged.	See response to 17.174 (Appendix G, Reference, scoring support determination).
Reference	site selection	16	155	SFI...Page 4-18, Table 4-3: It is unclear to what extent these variables are quantified in order to rate sites as least impacted and make comparisons.	This comment refers to DEQ's reference site selection criteria. The criteria do not require quantification to be suitable for selecting reference benchmarks. DEQ uses a standard protocol described in Hughes (1995). Also, see response to 7.12 (Reference, site selection).
Reference	site selection	20 31	220 364	May 25, 2001 letter: . . . figure 5-2 . . . [shows that DEQ] may have a set of reference sites that includes many sites that are not truly reference sites. In other states as much as 40% of the sites selected as reference sites do not warrant that categorization because of unrecognized degradation caused	The commenter suggests that inclusion of degraded sites in the reference data set may explain why the SMI cannot detect small or moderate levels of degradation. The variation in metric scores between reference and impaired sites leads the commenter to suspect the reference sites are not

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
				by humans. Those sites should be removed from the reference set before expected values for reference condition are defined for each metric. Inclusion of such degraded sites in the reference set lowers the threshold of biological quality. July 10, 2001 letter: I raised this point because I have seen so many circumstances where definition of reference sites involved errors that could be but were not corrected. . . . Inclusion of sites that are degraded in the reference set immediately and obviously compromises the expectation for biological condition at "reference sites." Adequate validation . . . should examine the landscape of each site to be sure that human influence is not present . . . [and] should examine the biota to make sure that the biota does not provide a clear degradation signal. . .	as "homogenous" as would be expected. It appears the commenter's definition and test for reference, no human degradation, is different from DEQ's. DEQ recognizes there are levels of reference depending on the situation and circumstances. There are three possibilities: 1) near pristine with few human impacts; 2) least impacted with some human impact; and 3) the best of what's available, with moderate levels of human impact/influence. DEQ is not trying to dilute the reference pool or lessen the detectability of the SMI. However, we do follow Idaho water quality standards and water quality law (IDAPA 58.01.02.04, 39:3602.20). Defining reference is a very difficult for even seasoned ecologists to agree upon (Hawkins et al. 2000). The reference data for the SMI was constructed according to accepted methods and processes. Because of our definition and realities on the ground, our reference data set may have sites with human impact, though the criteria process should eliminate obvious or egregious outliers. DEQ did have its contractor, Tetra Tech, reanalyze SMI in the Northern Mountains bioregion using an updated reference set. The SMI performance improved significantly. The discrimination efficiency matched or exceeded the SMI in the other two bioregions. Also see response to 7.345 (Macroinvertebrate, SMI development). DEQ appreciates the commenter's suggestions and will consider them in detail to see if they can help us improve our operational definitions and applications of reference. Also see responses to 17.174 (Appendix G, Reference, scoring support determination) and 12.77 (Reference, site selection).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	30	358	July 6, 2001 letter: Idaho DEQ went through several iterations to refine the definition of reference sites. While the initial set of reference sites was indeed a "mixed bag," the reference sites of Figure 5-2 represent considerable refinement and standardization to identify least-stressed reference sites . . . the figure caption clearly states that it refers to "identified reference sites that comprise the reference condition".	This comment was a rebuttal to comments 20.220 and 31.364 (Reference, site selection). Therefore no response from DEQ was requested.
Reference	site selection	20 31	221 365	May 25, 2001 letter: . . . they may have included several kinds of sites in the reference set. That is, reference site sets include sites that are not classified properly. They are not likely to have done this in the way noted here but to illustrate the point: they may have included warm and cold-water streams in a reference set. I cannot tell if the Idaho protocol involved validation of stream classifications across a set of "reference streams." July 10, 2001 letter: Was any evaluation done to determine if [classification] is good enough to justify its use to drive public policy? Were other alternatives tried to determine how they compared with this approach? . . . was geographical area based without reference to widely recognized (and often not geographical) secondary classes being evaluated or considered? Secondary classes that are important in my experience include measures of stream size (watershed area, flow, stream order, etc.), elevation, and water temperature. Were these included in the classification used for the Idaho data? Were those factors actually evaluated for their effects on the results? Does taxa richness vary with elevation or stream size? Does the number of individuals in samples vary systematically with any of these physical factors? Any correlates of these factors would mean that an effort to include them in the classification would likely be appropriate. In the current	The commenter is concerned about an inappropriate classification scheme as the current classification does not yield a relatively homogenous data set. Classification is a corner stone of biological assessment just as is the definition of reference. An entire journal was the subject of reference and classification when applied to biomonitoring (Hawkins and Norris 2000). Inappropriate classification can lead to mixing of streams (apples vs. oranges), increasing variability and confounding results. DEQ has long recognized the difficulty in trying to apply a classification scheme at a statewide scale. Studies on small-scale watersheds often yield more homogenous stream types and classifications, as in the case of the commenter's Puget Sound Lowland study. However, expanding to the statewide scale will naturally favor more heterogeneity than homogeneity. This is not to say it's impossible, but more difficult in its application and the resolution will likely be more coarse. DEQ chose ecoregions (ER) to classify streams for purposes of the SMI. While other potential approaches were not directly tested, logical use of ER stems from experience and their success in Wyoming and other states (Barbour et al. 1996). Embedded in the concept of ER are important stratisifiers such as geography, topography, climate, soils and vegetation.

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				document, I only see NMDS at the species level and PCA of the metric values. Why wouldn't an ordination of physical features be more appropriate?	While Tetra Tech did not test other variables, Mebane (2000) found only elevation to be a secondary stratifier to ER in the SFI. Fore and Bolman (2000) tested ER, stream order and Rosgen stream type as possible classification variables. They found ER provided the best classification results when testing habitat variables versus fish, invertebrates and geographic features. Consequently, they selected ER to group streams for analyzing and development of the SHI. Further, Fore and Grafe (2000) used ER in the RDI. These examples support the use of ER as an appropriate way to group ecological aquatic systems at a statewide scale. DEQ recently finished collaborating with EPA on new Level IV Ecoregion descriptions for Idaho (McGrath et al. 2001). Two new Level III categories were added to the 8 previous and 71 subregional categories were described under the old Level III categories. This new effort may produce finer resolution of ER than currently used. The finer resolution in Idaho may produce more homogenous stream classifications and perhaps even better discrimination efficiency in water quality assessments. See responses to 11.50 and 11.51 (Reference, site selection).
Reference	site selection	30	359	July 6, 2001 letter: . . . classification is a critical step for developing biological indexes, but the reality is that the classification is as good as the data will allow. As in identifying the reference sites, Idaho DEQ and its consultants went through several iterations to refine the classification of the reference sites. The final classification was geographic, although substrate was also examined for classification power. Additional information may refine the classification in the future, as more comprehensive data are collected on Idaho's streams.	This comment was a rebuttal to comments 20.221 and 31.365 (Reference, site selection). DEQ appreciates this further clarification.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	25	273	The proposed WBAG II was not conservative in choosing reference sites. A stream is defined as in its reference condition if it is considered to "represent natural conditions with few impacts from human activities and is representative of the highest level of support attainable in the basin" (section WQS 003.85). ...Instead, it equated streams with "few impacts" to those determined to be "minimally" impacted from chemical pollution, channel modification, roads and grazing, agriculture, logging, construction, or other human disturbances, and ignored the direction that reference streams "represent the highest level of support attainable in the basin."	We believe our minimally impacted sites "represent the highest level of support attainable in the basin." See also response to 17.174 (Appendix G, Reference, scoring support determination).
Reference	site selection	25	274	It should come as no surprise, then, that the range of values describing "reference" condition for the various multimetric indexes is extremely wide. ...A range of this magnitude is likely the result of: the inclusion of sites that are not truly reference, a failure to segregate different types of streams within the reference set, an inadequate sample size, a failure to conduct sampling within the prospective reference sites in comparable habitat types, or other actions that led to inclusion of a non-homogenous group of streams in the reference sets. Regardless of the root cause, the end result is a set of reference data that are not particularly useful in setting benchmarks against which other streams can be judged.	There are indeed a number of factors that can add noise to the indexes such as those used by Idaho in its WBAG II. One not mentioned by the commenter, and perhaps the biggest, is natural variability. Reference, particularly reference biology, is not static, but rather covers a dynamic range of conditions. Yes, finer stratification, and tighter sampling periods could reduce variability in our site measures and larger sample sizes could reduce variability in estimates of mean condition. However, in putting together a monitoring program DEQ strikes a balance between more intensive sampling (more information about a particular site) and more extensive sampling (more information about all the waters of Idaho). What we have is a compromise of stratification and sample size per strata given available resources. See also response to 11.50 (Reference, site selection).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Reference	site selection	25	341	Five of the metrics specified for the Stream Habitat Index (SHI) are field rated using eye estimates, despite the fact that USEPA (1999) explicitly recommended against the use of ocular measurements. As discussed in #7 above, habitat variables have been identified as useful indicators of aquatic ecosystem health by a number of authors. Additional or modified habitat metrics (including pool frequency, residual pool depth, bank stability, width/depth ratio) as discussed in Bauer and Ralph (1999), Overton et al. (1997), and MacDonald et al. (1991) should be evaluated to determine their utility. Finally, as discussed in concern #6 and #7, careful consideration needs to be given to the influence of poor reference site selection on the utility and accuracy of the SHI.	See response to 17.174 (Appendix G, Reference, scoring support determination).
Rivers	development	14	100	The River Framework advances how we think about and evaluate larger rivers, but in our judgment is not yet ready to be adopted for regulatory purposes.	The overall River Framework was peer-reviewed by several nationally known experts. Additionally, the RMI was published in a peer-reviewed journal (Royer 2000). The RDI and RFI are working through the process to be published in peer-reviewed journals. The RPI was based on the Oregon Water Quality Index and was also published in a peer-reviewed journal (Cude 2000). See also response to 14.104 (Physiocochemical, RPI).

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Rivers	hydromodifica-tion	8	23	A suitable measure and expectation for aquatic life use for large, hydrologically modified rivers must still be developed. We suggest that the only way such a measure can be done is on a site-specific basis. Title 40, Section 131.10 (g) of the CFR acknowledges that certain conditions may prevent attainment of designated uses. These include low water flow conditions (131.10 (g) (2)) and dams or other types of hydrologic modification (131.10 (g) (4)). For water bodies impacted by these factors, the CFR provides that designated uses can be changed. These highly modified water bodies are not comparable to anything else. The aquatic life use and water quality standards (both numeric and narrative) for these water bodies should therefore be site specific and based on the best reasonably attainable conditions.	See response to 14.106 (Overall, site specific).
Rivers	hydromodifica-tion	14	92	The documents and decision diagrams need to make available the flexibility allowable in Idaho WQS and the CWA and acknowledge that some systems cannot, and should not be expected to, attain cold water biota and/or salmonid spawning uses	See response to 14.106 (Overall, site specific).
Rivers	hydromodifica-tion	14	102	”What is missing from this section, and the WBAG II process in general, is guidance on how to appropriately assess the highly modified, “working rivers” in Idaho. Other states have developed multiple tiers of expectations for various categories of water bodies (e.g., Ohio), and this kind of approach should be included in the WBAG II and Idaho WQS. We could not find how the analyses, three classes, and conclusions of this RFI section were then translated into the rating categories and minimum threshold value in the overall assessment section (Table 7-1). This needs further elucidation in the document.	See response to 14.106 (Overall, site specific).

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Rivers	hydromodifica-tion	14	124	Overall assessment...There is no apparent opportunity provided in the Rivers Framework for professional judgment or site-specific conditions that might lead to a different verdict.	See response to 14.106 (Overall, site specific).
South Fork Palouse River	remediation	1	2	...south fork of the Palouse River. I would like to know when, if ever, action will be taken to clean this river. … I would like to formally register my complaint about the current situation and ask that the laws in place be enforced.	This public comment period was to address the assessment methodology. Comments concerning specific water bodies will be considered once assessments are completed and a 303(d) list prepared. This comment was forwarded to the DEQ Lewiston Regional Office for consideration.
Uses	methods – fish	12	74	Pg. 5-7-Last paragraph…"the presence during July or August of even a single individual of a highly stenothermal native fish species would support…cold water is an existing use."..Again, this is very conservative. There is ample literature that indicates stenothermal fish, such as bull trout, wander over vast areas in search of food. Furthermore, there is evidence that sub-adult and adult fish can be very tolerant of warm temperatures (20 C is not too high). Therefore, we can expect to find these fish in many warm places in the summer. Suggestion: remove this section, stay with the 50/50 rule.	Bull trout may be highly migratory, but in contrast to the comment, all studies DEQ has reviewed indicate that bull trout are very unlikely to occur at temperatures greater than cold water ALUS criteria (maximum of 22°C). See the SFI Figure 4-2 (Mebane 2000), Rieman and Chandler (1999), and Dunham and Chandler (2001) for more information. Bull trout presence in July or August suggest cold water is the most appropriate use classification. See also response to 13.90 (Uses, methods – fish).
Uses	methods – fish	12	78	Pg. 5-9 Table 5-3. Comment: Using Fish and Game management plans to determine "use" designations is not appropriate. F&G management decisions are based on factors other than biology and water quality. DEQ should not rely on the management decisions of another agency made for another purpose. Suggestion: remove.	DEQ will not solely rely on IDFG objectives, but believes that some interagency coordination will likely benefit the WBAG process. IDFG management objectives (e.g., cold water or warm water fishery) can provide useful information.
Uses	methods – fish	12	79	Pg. 5-9 Second paragraph…"Presence of juvenile salmonids…" Comment: The paragraph should contain an explicit statement of how many juveniles are needed to pass the test.	The presence of single juvenile salmonids in streams strongly suggests reproduction occurred in the near vicinity and provides enough evidence to assume the use for assessment purposes. Any categorical "how many fish" guideline will inevitably not fit all circumstances.

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Uses	methods – fish	12	80	Pg. 5-9 Last paragraph. Comment: This paragraph seems out of place. Why is it placed in the Salmonid Spawning section?	Revised accordingly.
Uses	methods – fish	13	90	Section 5.4.2.2.1—Fish Coldwater Indicator Taxa We recommend you add steelhead trout and sockeye salmon to your list of “highly stenothermal” fish species.	Juvenile steelhead are hard to distinguish from juvenile rainbow, which are not considered highly stenothermal. Figure 3-1 (formerly Figure 5-1) and guidance were changed to "presence of bull trout" since there is greater certainty of their cold water requirements.
Uses	methods – fish	13	91	Section 5.4.2.2.1—Fishery Management Objectives We concur that the Idaho Fisheries Management Plan should be used as additional documentation to establish aquatic life use determinations. We further agree that potentially conflicting use designations should be reviewed in consultation with IDFG before final designation is determined.	DEQ agrees with this comment. Also, WBAG II addresses use designations only as needed to complete water body assessments. Revising or establishing new use designations in the Idaho water quality standards is a separate process (see Section 3.2., Idaho Code 39-3604 and WQS § 101.01).
Uses	methods – fish	14	95	The WBAG II notes that there may be cases in which DEQ’s aquatic life use designations conflict with IDFG fisheries types and management objectives, and should be resolved in consultation with IDFG. We certainly support this concept and approach, but recommend that DEQ make the process more explicit within the WBAG II decision framework.	See response to 13.91 (Uses, methods – fish).
Uses	methods – fish	16	144	evidence of salmon reproduction ought not to be required to designate salmonid spawning as a beneficial use. If there is historical evidence that there were salmon in a stream after 1975, then it seems that salmonid spawning must be designated. Also, if the potential for salmon spawning exists, then it should be designated as such.	DEQ concurs that there is a potential for designating salmonid spawning, even though it has not existed since 1975. Such a designation would require a use attainability analysis to show it is an attainable use. The commenter may have confused “salmonids” and “salmon.” Salmonids include trout, whitefish, and salmon. DEQ has added a definition for salmonid to the WBAG II glossary to reduce confusion.
Uses	methods – fish	16	145	We also take exception to the default beneficial use designation in the absence of data to be cold water biota….. Thus, we believe that the default beneficial use designation should be salmonid spawning in areas without barriers to anadromous fish in 1975.	The "default" beneficial use designations are prescribed in Idaho WQS § 101 and cannot be changed via WBAG II.

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Uses	methods – fish	16	146	Section 5.4.2.2 Existing Uses, page 5-7: ...." Since fish sampling is prone to many types of error, and fish populations fluctuate spatially and temporally, decisions made using this data should be more conservative (i.e. 50% is too high a cutoff). ...The existing use should not be determined solely by a percentage of fish species present.	The existing use is not determined solely by a percentage of fish species present. The guidance also suggests using other evidence such as macroinvertebrate cold water indicators, or bull trout presence in July or August. Please see Section 3.
Uses	methods – fish	16	147	Fish cold water indicator taxa, page 5-8: Steelhead should be included as a "highly stenothermal species" as their lethal limits are cooler than chinook. This is consistent with Table 5-3, IDFG classification of "cold water or anadromous fishery" corresponding to IDEQ cold water aquatic life classification.	See responses to 12.74 and 13.91 (Uses, methods – fish).
Uses	methods – fish	16	149	Fishery management objectives, page 5-8: The aquatic life use classification should be based on the presence of native species prior to alteration of habitat by land management.	The issue of river to reservoir conversions and whether reservoirs should be assessed as rivers goes beyond the scope of WBAG II and the authority of DEQ.
Uses	methods – macroinvertebrates	12	71	Pg. 5-6-Second paragraph…The 3 taxa or 3% indicators seem very conservative. It is doubtful that many biological scientists would classify a community as "cold water" with such low representation of cold-water animals. Analogy…if 3% of a human community was white-collar workers and 97% were manual laborers, would you classify the community as a white-collar community?..Technically, at the very least, the community should be dominated (50+%) by cold-water animals. If policy makers want to be conservative they can go less than 50%, but 3% seems extremely low.	This section was rewritten in an effort to clarify the process. Percentages of obligate cold water species tend to be low even in very cold streams. The majority of species have broad or unknown thermal tolerances. New information (Maret et al. 2001) supports the 3 taxa or 3% value (see Section 3.2.2.1.).
Uses	methods – macroinvertebrates	12	73	Pg. 5-7-Second paragraph…We agree, except for macro invertebrates the text states 3 taxa or 3%.	See response to 12.71 (Uses, methods – macroinvertebrates).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Uses	Methods – macroinvertebrates	14	110	Macroinvertebrate Indexes: ...there may not be sufficient data to support the "3 taxa or 3 percent rule" for indicating cold water use classification. ..). The "Lester and Robinson (2000)" citation in the text is not included in the reference section. Also on page 5-6, the WBAG II states: "Other benthic macroinvertebrates are most likely stenothermal (i.e., have narrow temperature tolerances), although published literature reports are lacking." The WBAG II does not provide a clear line of evidence on this.	The Lester and Robinson (2000) citation has been added to the text. The section was revised to include empirical data analysis for macroinvertebrate taxa found in Idaho (see Section 3.2.2.1.). See also response to 12.71 (Uses, methods – macroinvertebrates).
Uses	Methods – temperature	12	76	Pg. 5-8-Second paragraph…"waters that exceed 20 C." Comment: Is this temperature an instantaneous max, daily average, weekly average? DEQ should specify to avoid multiple interpretations.	In this instance, temperature is a mean daily average temperature (MDAT). This has since been changed to 19°C and Section 3 was revised to clarify the guidance.
Uses	Methods – temperature	16	148	Temperature data logger records, page 5-8: "A stream that is representative of the highest level of support in the basin" may have been altered significantly from its original character, making it unsuitable as a temperature reference.	A stream that is representative of the highest level of support in the basin is by definition a reasonable estimate of a fully supported use.
Uses	Methods – wildlife habitat	11	70	As a side note- a similar determination value could also be utilized for historic species. ...However, as a majority of Idaho waters no longer viably support their historic species, it would still be most practical to base a wildlife designation on the current known or current potential species for a site-rather than on historic species occurrence.	See response to 21.230 (Uses, methods to establish).
Uses	Methods to establish	21	230	DEQ needs to classify beneficial uses for cold-water species and salmonids based solely on the life history requirements native cold-water species of Idaho only.	Beneficial uses are set in the Idaho water quality standards (WQS § 100) and cannot be changed via the WBAG.
Uses	methods to establish	21	231	DEQ needs to look past the inception date of the Clean Water Act for its determination calls on historic beneficial uses and consider uses present throughout the last century.	This comment relates more to use designations and use attainability than WBAG II. WBAG II only describes how DEQ determines which uses should be assessed.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Uses	methods to establish	25	291	Unfortunately, the proposed WBAG II then limits itself to directing the assessor “to first determine which uses are designated or existing” without expanding on the requirement regarding the DEQ determination on the presence of a healthy, balanced biological community.	It is necessary to know what kind of biological community is expected (e.g. cold water) before estimating its health through the ALUS indexes.
Water body size	wetted width	25	265	Two of the three criteria proposed for use in distinguishing between streams and rivers do not comport with the recommendations provided by EPA (USEPA 1999). Specifically, WBAG II proposes to use average wetted width at base flow and average depth at baseflow. Problems with consistency in these measurements were discussed at length by EPA in their comments on the 1998 section 303(d) list, wherein they recommended use of bankfull width and depth measurements rather than simple width and depth...First, although the WBAG II proposes that mean annual discharge and watershed area be used to further evaluate those water bodies not clearly falling within the river or the stream standard, the document does not specify what standards will be used for these additional criterion. Second, it is not clear from the discussion how any water body will acquire an average score rating of less than 1.0. This section needs significant clarification, particularly given that the results of the classification will determine whether or not habitat parameters will be considered when assessing the condition of the water body.	As indicated in response to 17.215 (Appendix G, Water body size, wetted width), we will consider changing our classification scheme to use bankfull characteristics in future iterations of the WBAG. Additional clarification has been added to the WBAG and DEQ has modified the rating system.
Water quality standards	temperature	14	96	We recommend that the WBAG II and other related guidance document this issue, the ongoing work in this area and identify a process to resolve any new temperature standards, the guidance must note that the temperature standards are under development and that the guidance will be revised as soon as they are adopted.	DEQ believes WBAG II must address temperature and other water quality standards that are currently in effect. Potential revisions to Idaho water quality standards are not used in the assessment process.

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Water quality standards	temperature	22	240	I believe it is necessary to reach final and realistic resolution to temperature standards on perennial streams.	See 14.96 (Water quality standards, temperature).
Water quality standards	variances	14	93	Aquatic life and other uses can be limited by natural and anthropogenic hydrological modifications or other conditions. Federal regulations at 40 CFR 131.10(g) and Idaho WQS define situations under which use refinements can be made, and/or variances granted, in light of such natural, uncontrollable or irretrievable conditions. The WBAG II and associated guidance documents make no mention of these factors or regulatory approaches. This is a major omission in the guidance that must be addressed before WBAG II is adopted as guidance by the State.	Use designations, revisions, refinements, and attainability relate to changes in water quality standards. The water body assessments may yield information useful for these processes; however, the WBAG II assesses current water quality standards and is not the forum for changing water quality standards. See response to 14.106 (Overall, site specific).
Water supply	support determination	25	288	It is likely that without specific guidance assessors will limit the definition to include only the immediate WBID when strong arguments can be made that all WBIDs upstream from the public water system diversion should be included. The proposed guidance fails to include quantitative protocols for reaching water supply use support determinations.	See response to 17.346 (Appendix G, Water supply, support determination).
Water supply	support determination	25	290	It is puzzling that the support of domestic water use is not also assumed to be a beneficial use of all water bodies in the state.	This comment is beyond the scope of WBAG II, which addresses current water quality standards. Designating beneficial uses occurs through a separate process (Idaho Code 39-3604 and WQS § 101.01).

Comment Type	Comment SubType	Correspon-dance ID	Comment Number	Specific Comment (verbatim)	Response
Wildlife habitat	support determination	11	69	…wildlife habitat...This does not need to be a highly technical determination- such as an in-depth analysis of bird, mammal, reptile, and amphibian species present. If habitat is appropriate for a stream or river and landform location (not degraded, but reasonably representative), dependent and obligate species will be supported along with any habitat generalists….A simplified determination would reasonably cover habitat values for applicable ESA species as well as the more common or expected species….A simple currently supporting/not supporting determination process (including automatic failure) could be developed based on physical appearances appropriate to the land form …	See responses to 11.66 (Aesthetics, support determination) and 11.68 (Aesthetics, support determination).
Wildlife habitat	support determination	25	287	Guidance is limited regarding contact recreation and water supply use and nearly non-existent regarding wildlife habitat and aesthetics use ...The proposed WBAG II does not establish quantitative protocols for determining if contact recreation use exists, although it identifies three main categories of evidence that should be used. Comprehensive direction should be included to guide consideration of the evidence, particularly that related to water body size and accessibility. Furthermore, a time frame should be specified for consideration of evidence indicating the presence and use of swimming areas or bathing beaches. Aquatic Life use is assumed to exist if it was present more recently than 1975, even if the use no longer can be documented to occur. A similar logic could be applied to contact recreation use.	See responses to 17.185 (Appendix G, Contact recreation, support determination), 11.66 (Aesthetics, support determination), and 11.68 (Aesthetics, support determination).

Section 3. Significant Changes to WBAG II

DEQ appreciates the time and effort commenters took to improve the WBAG II. As a direct result of these comments, DEQ has made significant changes to the process. The following list highlights those changes according to each section. For more detailed information, please see pertinent documents and responses to comments in Table 2-1.

3.1. Section 1 – Overview

In Section 1 of WBAG II, DEQ removed the objective stating WBAG II identifies causes and sources (see Section 1.2.).

3.2. Section 2 – Monitoring Design and Data Representation

In Section 2, DEQ added a description of another pertinent monitoring program, the USGS/DEQ trend monitoring network. Also, the mileage limitation for data extrapolation was removed. DEQ will use stream order, land use, and likely sources of impairment to establish assessment boundaries (see Section 2.2.2.). Lastly, DEQ changed the water body size determination to evaluate criteria from two size classes: small and large (see Section 2.2.3.) rather than small, medium, and large.

3.3. Section 3 – Identification of Beneficial Uses for Assessment

DEQ added Section 3 to describe how DEQ identifies beneficial uses to be assessed. Within this section, DEQ clarified that the policies to identify uses for assessment do not replace the use designation process as described in Idaho Code 39-3604 and the WQS §101.01(see Section 3.2.2.).

For undesignated waters, DEQ changed the process for identifying the cold water biota beneficial use (see Section 3.2.2.1.). First, DEQ added an additional macroinvertebrate cold water indicator taxa list. This list was empirically derived using Idaho taxa only (Appendix A). Second, the presence of stenothermal fish in July and August was changed to the presence of bull trout only. The most current macroinvertebrate and fish taxa lists identifying temperature tolerances were added to the guidance (see Appendixes B and C). More taxa information or list updates may be obtained by contacting the DEQ Surface Water Program or visiting the DEQ Web site at http://www2.state.id.us/index.htm.

3.4. Section 4 – Data Quality and Use of Outside Data

DEQ significantly revised this section to clarify the tiered approach for outside data (see Section 4.2.) and summarize how different types of data are used in the assessment process (see Section 4.3.).

3.5. Section 5 – Criterion Evaluation and Exceedance Policy

DEQ reorganized and revised this section to improve understanding of the criterion evaluation and exceedance policies. For instance, DEQ explained temperature policies in more detail, particularly pertaining to criterion exceedance calculations and temperature exemption (see Section 5.2). Also, DEQ revised the salmonid spawning time periods, based on additional analysis (see Table 5-2 and Appendix F).

3.6. Section 6 – Aquatic Life Use Support

Some of the most significant guidance changes occurred in Section 6. DEQ clarified the reference site selection process and provided policy for hydrologically modified rivers. The reference for hydrologically modified rivers will be selected on a case-by-case basis for each river system (see Section 6.1.). This pertains only to the use of the river multimetric indexes. The numeric criteria associated with designated uses are not affected by this policy.

DEQ had its contractor, Tetra Tech, reanalyze the Stream Macroinvertebrate Index (SMI) in the northern mountains using a revised reference and impacted data set. The analysis resulted in scoring changes for this bioregion (see Section 6.4.1.1.). Also, DEQ performed an analysis of the discrimination efficiencies and Type I/II errors of each of the stream index reference and impacted data sets. Based on this analysis, DEQ modified the scoring breakpoints for the SMI, SHI, and SFI, including changing the SHI condition ratings to a 3,2,1 approach (see Sections 6.4.1.2. – 3.).

Another significant change to the stream ALUS approach was the elimination of the overwhelming score approach in the stream index data integration. Consequently, streams and rivers now have the same index data integration approach, which requires a minimum of two indexes to make an ALUS determination unless there is a violation of the minimum threshold (see Section 6.4.2.2.).

Lastly, DEQ described the linkage between the ALUS approach and legal requirements (see Section 6.6).

Generally, the river indexes did not change, except that the River Physicochemical Index (RPI) was removed from the river data integration procedure until additional testing of Idaho data is completed. The RPI may still

provide interpretive information outside the index data integration method (see Section 6.4.2.1.).

3.7. Section 10 – Assessment Example

The last major change to the guidance entailed providing two examples of the assessment process. The Big Cottonwood example illustrates an assessment using BURP data only (see Section 10.1.). In the Deer Creek example, DEQ describes how to use outside data and interpret that data to determine violations of numeric temperature criteria (see Section 10.2.).